



**LEBANON PEDESTRIAN & BICYCLIST ADVISORY  
COMMITTEE  
SEPTEMBER 3, 2024 - 7:00 PM  
MEETING ROOM 1, CITY HALL OR  
REMOTE VIA VIRTUAL PLATFORM  
LEBANONNH.GOV/LIVE**

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**1. Call to Order**

- A. To participate in this meeting, please [join live via Microsoft Teams](#) or call 929-229-5356 (access code: 868 909 984#). If you have trouble accessing this meeting, please [email catheryn.hembree@lebanonnh.gov](mailto:catheryn.hembree@lebanonnh.gov).

**2. Approval of Minutes**

- A. August 6, 2024

**3. Open to the Public**

**4. Study Items**

- A. Review Complete Streets Policy
- i. Street type definitions
  - ii. Characteristics needed to be a complete street
- B. Updates from Other Boards
- Planning and Development
  - Planning Board
  - City Council
  - Police Reports
  - Mascoma River Greenway Coalition
  - Class VI Roads
  - Communications Plan

**5. Other Business**

- A. **Review and Comment on Planning Board Application: Brickyard One Nominee Trust, 174 Hanover Street (Tax Map 48, Lot 4), 0 Hanover Street (Tax Map 48, Lot 2), 0 Hanover Street (Tax Map 48, Lot 1), and 238 Hanover Street (Tax Map 63, Lot 1), zoned R-1, R-O-1, R-3 & RL-3:** Request for Site Plan Review and a Conditional Use Permit pursuant to Sections 308.2, 310.2, 311A.2, and 501.2 of the Zoning Ordinance for a proposed 474-unit multi-family Planned Unit Residential Development (PURD) totaling +/- 731,600 sq. ft. in size, consisting of 11 buildings together with parking, utilities, landscaping, access, and other related site improvements. Applicant also requests a Conditional Use Permit pursuant to Section 308.4 of the Zoning

Ordinance to allow an increase in the maximum permitted building height from 45 ft. to 55 ft. **PB2024-22-CUPSPR**

- B. **Review and Comment on Planning Board Application: The Muse Lebanon, LLC (applicant), City of Lebanon (property owner), 20 Spencer Street (Tax Map 92, Lot 31), zoned LD:** Request for Site Plan Review for a proposed +/-76,064 sq. ft. multi-family building with 80 affordable housing units, together with parking, utilities, landscaping, access, and other related site improvements. Applicant also requests a Conditional Use Permit pursuant to Article III, Section 307.6.B.2 of the Zoning Ordinance to waive the requirement to reserve space within the street level story of the building for non-residential uses. **PB2024-36-SPR**

- C. **Middle School Traffic Flow Discussion**

**6. Future Agenda Items**

**7. Adjournment**

**The order of agenda items is subject to change.**

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to [LebanonNH.gov/Live](https://LebanonNH.gov/Live) where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.



DRAFT

**PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE  
REGULAR MEETING MINUTES  
COUNCIL CHAMBERS– CITY HALL &  
REMOTE VIA VIRTUAL PLATFORM LebanonNH.gov/LIVE  
7:00 PM, AUGUST 6, 2024**

**MEMBERS PRESENT:** Erling Heistad (City Council); Marie McCormick; Haynes Bunn; Ben Swanson (Alt); Sean Dittrich

**MEMBERS ABSENT:** George Sykes (City Council, Alt); Clifton Below (Alt); Jared Toon (Alt) Tim Gilbert; Colin Smith (Chair)

**STAFF PRESENT:** Catheryn Hembree (Associate Planner); Rod Finley (City Engineer)

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**1) CALL TO ORDER:**

Vice Chair McCormick called the meeting to order at 7:00 PM.

**2) APPROVAL OF MINUTES**

**A. June 4, 2024**

*A MOTION was made by Mr. Heistad to approve the meeting minutes of June 4, 2024, as presented.  
Seconded by Ms. McCormick.*

*\*The vote on the MOTION was approved (5-0-0).*

**3) OPEN TO THE PUBLIC:**

None at this time.

**4) STUDY ITEMS**

**A. Review Complete Streets Policy**

The Committee reviewed the Complete Streets Policy. Mr. Rod Finley, City Engineer, represented the Public Works Department during the discussion. The Committee discussed using existing street typologies used by DPW when describing street designs in the updated Complete Streets Policy.

The Committee participated in an exercise that took maps of existing neighborhoods in Lebanon and classified streets based on existing definitions. The purpose of this exercise was to see if the existing definitions would work in the Complete Streets Policy, or if they would need to be changed.

Ms. Hembree sent the Committee home with the task of thinking about how they would want to rework the existing definitions and what they would want these types of streets to look like in the new Complete Streets Policy.

**5) OTHER BUSINESS**

**A. West Lebanon/Hanover Greenway Update**

The Committee heard an update on the West Lebanon/Hanover Greenway project.

**B. Bike Parking/Ebike Charging**

1 The Committee discussed potential bike parking/ebike charging stations that would be located at the  
2 Kilton Library and Downtown.

3  
4 C. Safety Signage

5  
6 The Committee discussed safety signage that was created by the Recreation, Arts, and Parks Department  
7 (RAP). RAP requested comments on the proposed signage. The Committee recommended removing  
8 “suggested” from the speed limit sentence. They also recommended adding a statement about groups not  
9 taking up the entire width of the path to allow others to pass safely.

10  
11 **6) UPDATES FROM OTHER BOARDS:**

12  
13 A. Updates from Other Boards

- 14  
15 • Planning & Development

16  
17 None at this time.

- 18  
19 • Planning Board

20  
21 Ms. Hembree stated the site visit for the 174 Hanover Street Extension apartment project will be  
22 held the following Tuesday at 5:30pm.

- 23  
24 • City Council

25  
26 None at this time.

- 27  
28 • Police Reports

29  
30 Ms. Bunn stated the last report of crashes put Lebanon over the total in all crashes in 2023.

- 31  
32 • Mascoma River Greenway Coalition

33  
34 Ms. Hembree stated that there were currently no new updates from the Parks and Recreation  
35 Director, Paul Coats, on this item.

- 36  
37 • Class VI Roads

38  
39 None at this time.

- 40  
41 • Communications Plan

42  
43 None at this time.

44  
45 **7) FUTURE AGENDA ITEMS**

46  
47 Ms. Hembree asked the Committee if they wished to move the date of the November meeting because it  
48 falls on Election Day. The Committee agreed and Ms. Hembree said she would send out a doodle pool to  
49 find a date in November that worked for a quorum of the members.

50  
51 *A MOTION was made by Ms. McCormick to move the November meeting date to the one which works best*  
52 *for all Committee members. Seconded by Mr. Swanson.*

1    *\*The vote on the MOTION was approved (5-0-0).*

2  
3    **8) ADJOURMENT:**

4  
5    *A MOTION was made by Ms. McCormick to adjourn the meeting. Seconded by Mr. Swanson.*

6    *\*The vote on the MOTION was approved (5-0-0).*

7  
8    **The meeting was adjourned at 8:36 PM.**

9  
10    Respectfully submitted,

11    Kristan Patenaude, Recording Secretary

May 13, 2024

Ref: 52933.00

Mr. Nathan Reichert  
Planning and Development Director  
51 North Park Street  
City Hall, 5th Floor  
Lebanon, NH 03766

Re: The Brickyard Multi-family Planned Unit Residential Development (PURD)  
174 Hanover Street Ext. & 238 Hanover Street (Map 48 Lots 1, 2, & 4 and Map 63 Lot 1)  
Project Description and Impact Statement for Site Plan Review

Mr. Reichert,

In support of the site plan review application, this letter provides a project description and impact statements for the proposed multi-family Planned Unit Residential Development (PURD) project (the Project) located at 174 Hanover Street Extension & 238 Hanover Street (the Site).

## Project Description

### Summary

The Applicant, Brickyard One Nominee Trust, is proposing a new multi-family Planned Unit Residential Development (PURD) with associated parking, stormwater management, utilities, landscaping, and pedestrian/vehicular access, on Tax Map 48 Lots 1, 2, and 4 and Tax Map 63 Lot 1 located at 174 Hanover Street Extension and 238 Hanover Street. As currently proposed, the Project is comprised of ten four story residential apartment buildings over vehicular parking, totaling 473 units. An additional building is proposed at the northeast corner of the Site, which is anticipated to contain the development's leasing office, maintenance shop, and one residential unit for the on-site property manager.

The Site encompasses approximately 133.5 acres on four parcels of land primarily consisting of woodland, with areas previously developed as the former Densmore Brick Company's mining and manufacturing facility and a series of electric transmission lines. The overall property that the Project is situated within includes four local zoning districts, however all work is proposed within the R-1, R-3, and RO-1 districts. The RL3 district area that covers approximately 105 acres toward the rear of the property will not be developed as part of this application and has not been included in the PURD density or open space calculations (refer to attached PURD calculation figures). The RL3 property area may be developed as part



of a separate future application, with access provided through the Project Site utilizing one of the proposed below-building parking area driveways.

The Site topography consists of significant grade change, generally sloping down from west to east. Densmore Pond and associated streams and wetland resource areas are situated at the low point of the Site near Hanover Street.

The site improvements include a looped driveway accessed via Hanover Street at either end, additional surface parking throughout the site, and parking below the ten apartment buildings. The Project was designed to minimize disturbances to the existing wetlands to the maximum extent possible. A trail system is present north and northwest of the Site. The Site is proximate to I-89 access, the Hanover Street School and Lebanon High School, and is within 2 miles of Dartmouth Hitchcock Medical Center. Additionally, Advance Transit's Heater Landing bus stop is currently only 0.2 miles from the Site, however with the additional ridership resulting from this project, there is potential to coordinate future stops.

These components of the development are discussed in greater detail in the following sections. Please also refer to the attached site plans for a graphical depiction of the Project as well as technical details.

### **Site Layout**

The site layout was developed in a way that accommodates the existing site characteristics, including topography, wetlands, Densmore Pond, and surrounding roadways, and respects the nearby existing mountain biking trail system. Proposed buildings are oriented to balance earthwork, minimize the overall disturbed area. Additionally, the Project intends to activate the area along the banks of Densmore Pond and overlooking the brick kilns as resident amenities and a tribute to the Site's legacy.

Vehicular circulation is provided via a looped driveway accessed via two full-service curb cuts along Hanover Street. Two access points provides continuous fire access and disburses daily traffic, and is offset by the removal of two existing driveway curb cuts. Parking is available along both sides of the site driveway and each apartment building will be constructed using podium style construction, offering vehicular access to a covered parking area below the building. Addressing the natural topography and reducing the Project's overall disturbance, below-building parking areas will be built into the hillside, with the exceptions of Buildings 1, 6, and 7. As such the first floors of Buildings 2-5 are at-grade on the driveway side, and the first floors of Buildings 8-10 are at-grade on the side opposite the driveway. The parking levels are at least partially open-air on the remaining three sides. Buildings 1, 6, and 7 are true podium style buildings in that the parking area below the building is open-air on all four sides. It should also be noted that parking spaces below buildings are reduced to 8'x18' to allow more covered parking and reduce site impervious area. Site parking spaces regulated by the Zoning Ordinance meet the required 9'x18' dimensions.

Amenity spaces in the forms of a walking path along Densmore Pond, patios, a dog park, and overlook areas leverage site features and topography to offer tenants welcoming outdoor spaces and viewpoints.



### **Transportation**

Access to the Site will be provided via a looped driveway accessed via two full-service curb cuts along Hanover Street. As described previously, parking spaces exceeding the quantity required by the local zoning ordinance is proposed throughout the Site comprised of a combination of covered and typical surface parking. Due to the target bedroom mix, residents owning multiple vehicles are anticipated and as such the Applicant believes that additional parking above the minimum requirement is an operational improvement. The layout has been designed to accommodate circulation of emergency vehicles. The Applicant is providing bike storage on-site in excess of the quantity required by the local zoning ordinance. A sidewalk exists on the east side of Hanover Street, accessed from the Site via crosswalk at its southern driveway entrance. The Site is proximate to I-89 access and less than one quarter mile from Advance Transit's Heater Landing bus stop. A Traffic Impact Study has been provided as part of this application, and discusses existing and proposed traffic conditions in detail.

### **Wetlands**

Existing wetlands exist on-site and were field delineated by Goddard Consulting. As such the Project falls within the Wetlands Conservation District. Based on the wetland inventory, as depicted on the Lebanon Wetland Overlay District Map, none of the wetlands on the site are listed as High or Very High Value wetland inventory, and therefore there are no associated buffers zones.

Wetlands have been respected in the design of the Project to the maximum extent practicable, with priority given to minimizing wetland impacts. Due to the location of the wetlands on-site, access to the development area requires that both proposed site driveways include one stream and associated bordering wetland crossing. To minimize wetland impacts by locating driveway crossings at the narrowest suitable areas, the Applicant acquired parcel 63-1 and realigned the original driveway layouts. The resultant cumulative proposed wetland impacts are less than 3,000 SF and as such the Project is expected to require a minimal impact permit from the NHDES Wetlands Bureau. Accordingly, the Project is exempt from a special exception requirement at the local level.

### **Stormwater Management**

The Project will provide a stormwater management system pursuant to City of Lebanon and New Hampshire Department of Environmental Services (NHDES) regulations. To provide adequate water quality and water quantity control, improvements to the stormwater management system will include new catch basins and pipe network infrastructure that will direct the stormwater runoff to a series of surface and subsurface treatment/detention systems to achieve water quality and quantity control. A comprehensive Stormwater Management Report has been completed and is included with this site plan review application. Please refer to that document for detailed stormwater management information.



### **Utilities**

Connections to existing municipal and private utilities located in Hanover Street are proposed as follows.

#### **Water**

The Project will connect to the existing 10" water main within Hanover Street at both proposed driveway locations to create a looped water main providing domestic and fire protection services throughout the Site. Existing fire hydrants are located along Hanover Street and not intended to be modified by the Project. Additionally, the Project proposes hydrants along the site driveway intended to provide appropriate building coverage and easy access for apparatus. Hydrant locations and apparatus accommodations shall be reviewed by the Lebanon Fire Department. Hydrant flow testing will be conducted to confirm the existing pressures and flow rates near the Site and support the buildings' fire protection design by others.

#### **Sewer**

The Project will connect to the existing 12" PVC sewer main in Hanover Street at both proposed driveway locations. Connections are anticipated to consist of new precast concrete manhole structures installed along the existing sewer main with masonry troughs to properly introduce sanitary sewage flow generated by the development to the flow in the existing main.

#### **Other Utilities**

Electric, phone, cable/data, and fire alarm service to the Site is anticipated to be provided by new connections to the existing infrastructure in Hanover Street.

### **Landscape**

Landscaping will include a mix of native and acclimated/hardy deciduous and evergreen trees, shrubs, perennial groundcover and spring bulbs. The proposed plant palette will provide year-round interest through seasonal changing of foliage, blooms, bark color and texture, winter berries and a variety of evergreen species. Plant material will be used to frame and enhance views as well as screen at grade different elements of the site like transformer pads, parking areas, and dumpster enclosures.

A detailed Landscape Plan is included in the Site Plans accompanying this letter.

### **Construction Schedule**

Construction is anticipated to begin during the second half of 2024, beginning with tree cutting, building demolition, and debris cleanup. Once the necessary permits are obtained, site grubbing and earthwork operations will commence. Construction of roadways, utilities, and building pads may not begin until 2026. Buildings will then be constructed individually and sequentially from one end of the Site to the other. Occupancy of each building is anticipated upon its individual completion. Refer to the Phasing Plan included in the Site Plans accompanying this letter for more information related to the construction phasing intent.



## Project Impact Statement

Pursuant to Section 5.1.G.4. of the Lebanon Site Plan Review Regulations, the following statements of impact are offered as outlined in 6.9.B. of the Site Plan Regulations.

### **1. Natural resources and environmental quality including, but not limited to, water quality, air quality, wetlands, soil erosion and agricultural soils and a statement of pollution control and environmental impact mitigation measures.**

In support of the site plan review application which this letter is part of, as well as the upcoming NHDES wetland permit and Alteration of Terrain Permit applications, a Stormwater Management Report and supporting Erosion Control Plans outline the impacts and mitigation measures for the Project.

### **2. Capacity of the school system; effect on school bus transportation and distance of the proposed subdivision from the nearest elementary school.**

These items are addressed in the report attached hereto prepared by Fougere Planning and Development dated May 8, 2024 entitled "Fiscal Impact Analysis – The Brickyard – Hanover Street". Please refer to that document for detailed analysis and findings.

### **3. Adequacy of streets and/or sidewalks in the general area of the subdivision including major intersections providing access, and such other areas as requested by the Board.**

The Applicant and VHB attended a scoping meeting with the City Staff and NHDOT to identify intersections to be analyzed as part of the Site Plan Application. As such, a comprehensive Traffic Impact Study was prepared which analyzed the traffic generated by the Project at the proposed driveways and nearby intersections relative to existing conditions and various future conditions. The Traffic Impact Study is included with the site plan review application this letter is part of. Please refer to that document for detailed analysis and findings.

### **4. Sufficiency, availability, and capacity of utility services to provide water, fire protection, and sewer, and further, the impact of the subdivision on the municipal solid waste disposal facilities.**

Public and private utilities are available in Hanover Street. The Applicant will be submitting for a Sewer Allocation from the City for sewer capacity. A hydrant flow test will be performed to understand the flow rate and pressure available to the Site for domestic and fire protection services. Lebanon DPW will review the municipal utilities sufficiency and capacity as part of the Site Plan review process and the design refined as required. The Applicant will contract with a solid waste disposal company to remove the residential solid waste collected in dumpsters on-site.





**5. (If applicable) The impact of on-site subsurface sewage disposal systems as to adjacent wells, water supply systems, and any known aquifers so designated by the United States Geological Survey.**

Not applicable. Sanitary sewage generated by the Project will be collected on-site and discharged to the existing public sewer infrastructure in Hanover Street.

**6. Any special fire, police and public safety problems due to location and/or special conditions relative to the type of use.**

Portions of these items are addressed in the report attached hereto prepared by Fougere Planning and Development dated May 8, 2024 entitled "Fiscal Impact Analysis – The Brickyard – Hanover Street". Past meetings with City Staff did not identify any specific conditions or problems with the Site, however the Applicant will continue to coordinate with City Staff and the appropriate departments to address concerns that may arise during permitting.

**7. Impact of drainage from the subdivision on abutting properties and potential drainage problems both on the site of the subdivision and downstream from the subdivision.**

A stormwater management plan has been prepared in accordance with the City of Lebanon regulations and NHDES Alteration of Terrain regulations and is included in this application package. The stormwater management design will be reviewed by the City Engineer or Peer Review Engineer as part of the site plan review process. The report will also be submitted to NHDES as part of the upcoming Alteration of Terrain Permit. A copy of those documents will be shared with the City at the time of the NHDES submission.

**8. Fiscal impact statement analyzing the impact of the subdivision on municipal, school and county revenues and expenditures, including estimated potential tax revenue and estimated number of school children.**

These items are addressed in the report attached hereto prepared by Fougere Planning and Development dated May 8, 2024 entitled "Fiscal Impact Analysis – The Brickyard – Hanover Street". Please refer to that document for detailed analysis and findings.

On behalf of the Applicant, we hope this information is satisfactory in describing the Project, its approach, and its impacts to the community. Please feel free to contact me with any questions you may have.

Thank you,

A handwritten signature in blue ink, appearing to read "D Fenstermacher".

Dave Fenstermacher, PE  
Managing Director



# Site Plans

|              |                |
|--------------|----------------|
| Issued for   | Permitting     |
| Date Issued  | May 10, 2024   |
| Latest Issue | August 6, 2024 |

## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766  
Grafton County

### Owner/Applicant

Brickyard One Nominee Trust

Richard M. Marchese, Trustee

P.O. Box 720, Middleton, MA 01949

### Assessor's Map/Lot:

Map 48 Lots 01, 02, & 04

Map 63 Lot 01

#### Parking Requirements:

|                                            |           |   |            |   |        |   |              |
|--------------------------------------------|-----------|---|------------|---|--------|---|--------------|
| DWELLING, APARTMENT, ONE BEDROOM AND UP    | 474 UNITS | x | 1.5 SPACES | / | 1 UNIT | = | 711 SPACES   |
| TOTAL PARKING REQUIRED                     |           |   |            |   |        |   | = 711 SPACES |
| MAXIMUM PARKING ALLOWED (120% OF REQUIRED) |           |   |            |   |        |   | = 863 SPACES |

#### Bicycle Parking Requirements:

|                        |           |   |             |   |        |   |              |
|------------------------|-----------|---|-------------|---|--------|---|--------------|
| SHORT TERM PARKING     | 474 UNITS | x | 0.15 SPACES | / | 1 UNIT | = | 71 SPACES    |
| TOTAL PARKING REQUIRED |           |   |             |   |        |   | = 213 SPACES |

### Parking Summary Chart

| Description                     | Size     |          | Spaces   |          |
|---------------------------------|----------|----------|----------|----------|
|                                 | Required | Provided | Required | Provided |
| STANDARD SPACES                 | 9 x 18   | 9 x 18*  | 9        | 76       |
| EVSE-INSTALLED PARKING SPACES** | 9 x 18   | 9 x 18   | 40       | 40**     |
| EV-READY PARKING SPACES***      | 9 x 18   | 9 x 18   | 158      | 158***   |
| EV-CAPABLE PARKING SPACES****   | 9 x 18   | 9 x 18   | 512      | 513****  |
| TOTAL SPACES                    |          |          | 719      | 787      |
| TOTAL ACCESSIBLE SPACES *****   | 9 x 18   | 9 x 18   | 14       | 31       |
| VAN ACCESSIBLE SPACES*****      | 8 x 18   | 9 x 18   | 2        | 11       |
| LOADING BAYS                    |          |          | 0        | 0        |

\* 8 x 18 SPACES BELOW BUILDINGS REQUESTED AS ALTERNATE PARKING DESIGN PER SECTION 6.5.6(C) OF THE SITE PLAN REVIEW REGULATIONS.  
\*\* 40 SPACES LOCATED EXTERNALLY, 0 INTERNALLY  
\*\*\* 125 SPACES LOCATED EXTERNALLY, 33 INTERNALLY  
\*\*\*\* 64 SPACES LOCATED EXTERNALLY, 449 INTERNALLY  
\*\*\*\*\* ADA/STATE/LOCAL REQUIREMENTS  
\*\*\*\*\* INCLUDES 2 ACCESSIBLE STALLS BELOW EACH APARTMENT BUILDING

### Bicycle Parking Summary Chart

| Description       | Spaces   |          |
|-------------------|----------|----------|
|                   | Required | Provided |
| SHORT TERM SPACES | 71       | 80       |
| LONG TERM SPACES  | 142      | 142      |
| TOTAL SPACES      | 213      | 222      |

#### EV Parking Requirements (Included within Total Parking Required):

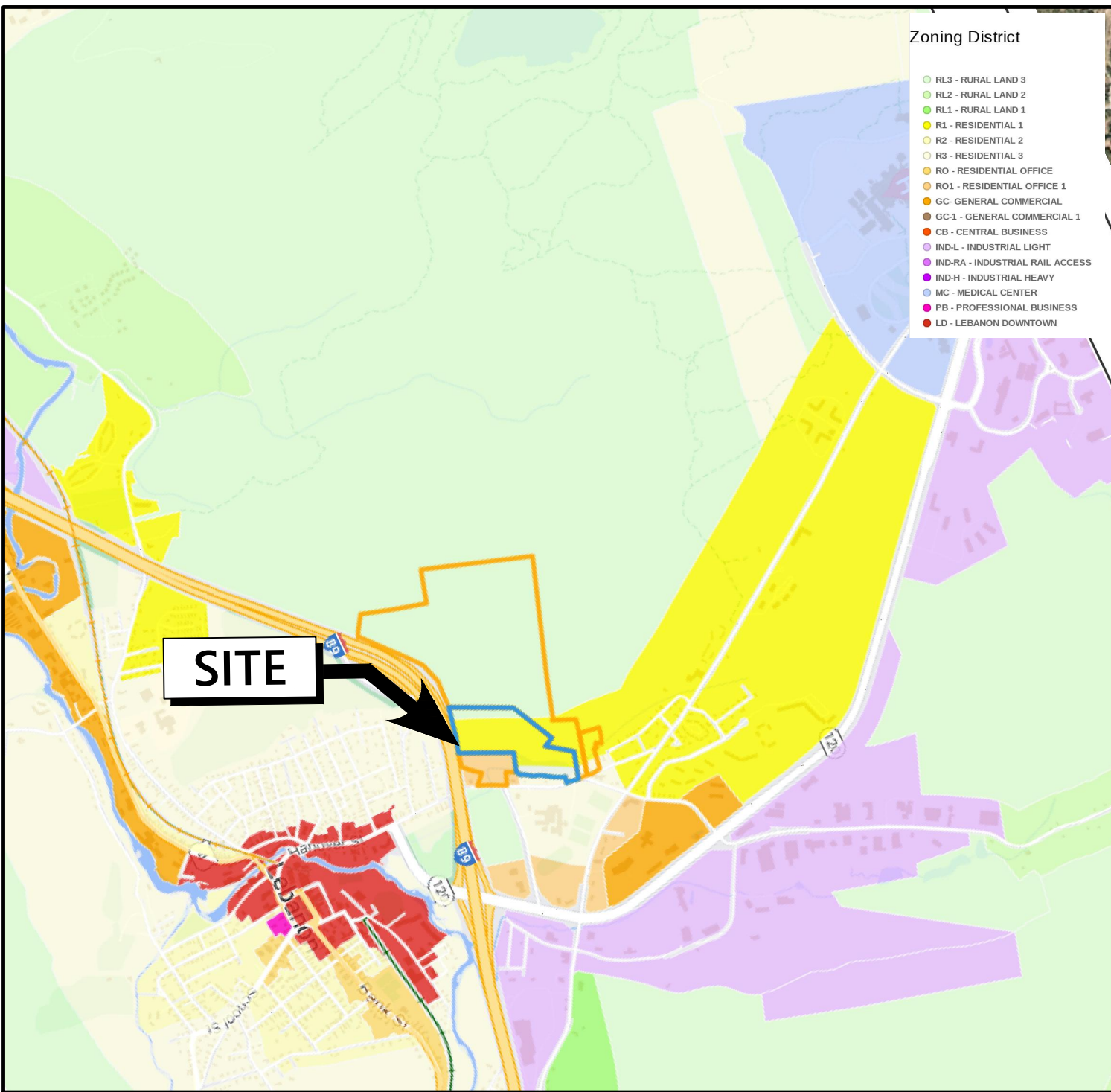
|                                                                |            |   |     |   |              |
|----------------------------------------------------------------|------------|---|-----|---|--------------|
| EVSE-INSTALLED PARKING SPACES*                                 | 787 SPACES | x | 5%  | = | 40 SPACES    |
| EV-READY PARKING SPACES (EVRI)*                                | 787 SPACES | x | 20% | = | 158 SPACES   |
| EV-CAPABLE PARKING SPACES (EVC)*                               | 787 SPACES | x | 65% | = | 512 SPACES   |
| TOTAL EV PARKING REQUIRED (INCLUDED IN TOTAL PARKING REQUIRED) |            |   |     |   | = 710 SPACES |

\* REQUIRED EVSE-INSTALLED PARKING SPACES = 5% OF TOTAL PROVIDED PARKING  
\*\* REQUIRED EV-READY PARKING SPACES = 20% OF TOTAL PROVIDED PARKING  
\*\*\* REQUIRED EV-CAPABLE PARKING SPACES = 65% OF TOTAL PROVIDED PARKING



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| 3        | C1.2        | Open Space Plan                         | August 6, 2024 |
| 4        | C1.3        | Access and Circulation Plan             | August 6, 2024 |
| 5        | C1.4        | Overall Site Plan                       | August 6, 2024 |
| 6        | C2.0        | Overall Layout and Materials Plan       | August 6, 2024 |
| 7        | C2.1        | Layout and Materials Plan 1             | August 6, 2024 |
| 8        | C2.2        | Layout and Materials Plan 2             | August 6, 2024 |
| 9        | C2.3        | Layout and Materials Plan 3             | August 6, 2024 |
| 10       | C3.0        | Overall Grading and Drainage Plan       | August 6, 2024 |
| 11       | C3.1        | Grading and Drainage Plan 1             | August 6, 2024 |
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| 18       | C5.0        | Overall Erosion Control Plan            | August 6, 2024 |
| 19       | C5.1        | Erosion Control Plan 1                  | August 6, 2024 |
| 20       | C5.2        | Erosion Control Plan 2                  | August 6, 2024 |
| 21       | C5.3        | Erosion Control Plan 3                  | August 6, 2024 |
| 22       | C6.1        | Plan and Profile 1                      | August 6, 2024 |
| 23       | C6.2        | Plan and Profile 2                      | August 6, 2024 |
| 24       | C6.3        | Plan and Profile 3                      | August 6, 2024 |
| 25       | C7.1        | Site Details 1                          | August 6, 2024 |
| 26       | C7.2        | Site Details 2                          | August 6, 2024 |
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| 29       | C7.5        | Site Details 5                          | August 6, 2024 |
| 30       | C8.1        | Phasing Plan 1                          | August 6, 2024 |
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| 32       | C8.3        | Phasing Plan 3                          | August 6, 2024 |
| 33       | C9.1        | Vehicle Tracking 1                      | August 6, 2024 |
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| 35       | C9.3        | Vehicle Tracking 3                      | August 6, 2024 |
| 36       | L1.0        | Overall Landscape and Tree Shading Plan | August 6, 2024 |
| 37       | L1.1        | Landscape Plan 1                        | August 6, 2024 |
| 38       | L1.2        | Landscape Plan 2                        | August 6, 2024 |
| 39       | L1.3        | Landscape Plan 3                        | August 6, 2024 |
| 40       | L2.1        | Landscape Details                       | August 6, 2024 |
| 41       | Sv-1        | Existing Conditions Plan of Land        | August 6, 2024 |
| 42       | Sv-2        | Existing Conditions Plan of Land        | August 6, 2024 |
| 43       | Sv-3        | Existing Conditions Plan of Land        | August 6, 2024 |



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| Page No. | Drawing No. | Drawing Title                              | Latest Issue   |
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| 44       | SL-1C       | Site Lighting Photometric Calculation      | July 18, 2024  |
| 45       | SL-2C       | Site Lighting Detail Sheet                 | August 6, 2024 |
| 46       | 0089-1201   | Building 1   Proposed Plan & Elevations    | August 2, 2024 |
| 47       | 0089-1202   | Building 2   Proposed Plan & Elevations    | August 2, 2024 |
| 48       | 0089-1203   | Building 3-5   Proposed Plan & Elevations  | August 2, 2024 |
| 49       | 0089-1204   | Building 6   Proposed Plan & Elevations    | August 2, 2024 |
| 50       | 0089-1205   | Building 7-10   Proposed Plan & Elevations | August 2, 2024 |

### Zoning Summary Chart

Zoning Districts: Residential 1 (R-1), Residential 3 (R-3), Residential-Office-1 (R-O-1), Rural Lands 3 (RL-3)

Overlay District: Floodplain District, Wetlands Conservation District, Steep Slopes

Use: 474-unit multi-family Planned Unit Residential Development (PURD)

Tax Map & Lot #: 48-01, 48-02, 48-04, & 63-01

| Zoning Regulation Requirements | Required (PURD) | Required (R-1) | Required (R-3) | Required (R-O-1) | Required (RL-3) | Provided                                    |
|--------------------------------|-----------------|----------------|----------------|------------------|-----------------|---------------------------------------------|
| MINIMUM LOT AREA               | 28.5 Acres      | 0.2 Acres      | 0.2 Acres      | 0.2 Acres        | 10.0 Acres      | 126.3 Acres                                 |
| FRONTAGE                       | 20.0 Feet       | NA             | NA             | NA               | 20.0 Feet       | 932.0 Feet                                  |
| FRONT YARD SETBACK             | 20 Feet         | 20 Feet        | 20 Feet        | 20 Feet          | 50 Feet         | 21 Feet                                     |
| SIDE YARD SETBACK              | 15 Feet         | 15 Feet        | 15 Feet        | 15 Feet          | 50 Feet         | 58 Feet                                     |
| REAR YARD SETBACK              | 20 Feet         | 20 Feet        | 20 Feet        | 20 Feet          | 50 Feet         | 56 Feet                                     |
| MINIMUM LOT WIDTH              | 75 Feet         | 75 Feet        | 75 Feet        | 75 Feet          | NA              | 932 Feet                                    |
| MAXIMUM BUILDING HEIGHT*       | 55 Feet         | 55 Feet        | 35             | 45 Feet          | 35 Feet         | 55 Feet                                     |
| MAXIMUM BUILDING COVERAGE      | 25.0 %          | 25.0 %         | 25.0 %         | 25.0 %           | 1.0 %           | 13.3 %                                      |
| MAXIMUM BUILDING COVERAGE      | 1,375,407 SF    | 1,375,407 SF   | 1,375,407 SF   | 1,375,407 SF     | 55,016 SF       | 164,950 SF                                  |
| GROSS FLOOR AREA               | N/A             | N/A            | N/A            | N/A              | N/A             | 655,000 SF                                  |
| IMPERVIOUS COVERAGE            | N/A             | N/A            | N/A            | N/A              | N/A             | 403,365 SF (32.5%)                          |
| USE                            | N/A             | N/A            | N/A            | N/A              | N/A             | Planned Unit Residential Development (PURD) |

\* Proposed height is permitted by CUP per section 308.4 of the City of Lebanon, New Hampshire Zoning Ordinance last amended April 3, 2024

### PURD Calculations

SEE PURD DENSITY AND PURD CALCULATION EXHIBITS UNDER SEPARATE COVER

| Zone                         | Buildable Area (SF)* | /      | Permitted Dwelling Units |
|------------------------------|----------------------|--------|--------------------------|
| RESIDENTIAL 1 (R-1)          | 989,956              | 3,000  | 330.0                    |
| RESIDENTIAL-OFFICE-1 (R-O-1) | 249,920              | 3,000  | 83.3                     |
| RESIDENTIAL 3 (R-3)          | 81,820               | 10,000 | 8.2                      |
| 1 PER 10,000*                | 20,000               | 10,000 | 2.0                      |
| SUBTOTAL                     | 1,239,876            |        | 423                      |
| 12% BONUS***                 |                      |        | 51                       |
| *TOTAL (INCLUDES 12% BONUS)  |                      |        | 474                      |

\* FOR THE PURD CALCULATIONS THE RL-3 ZONE (97.8 ACRES) HAS BEEN EXCLUDED, AREA RESERVED FOR POTENTIAL FUTURE BUILDOUT.  
\*\* FIRST 10,000 SQUARE FEET OF ZONE R-1 SUBTRACTED FROM TOTAL SQUARE FOOTAGE.  
\*\*\* 12% BONUS PERMITTED THROUGH APPROVAL BY PLANNING BOARD.

### Open Space Calculations

| Zone*                        | Total Area (SF) | % Required | Open Space Required |
|------------------------------|-----------------|------------|---------------------|
| RESIDENTIAL 1 (R-1)          | 1,252,605       | 30         | 375,782 SF          |
| RESIDENTIAL-OFFICE-1 (R-O-1) | 286,532         | 30         | 85,960 SF           |
| RESIDENTIAL 3 (R-3)          | 123,849         | 50         | 61,925 SF           |
| TOTAL OPEN SPACE REQUIRED    |                 |            | 523,666 SF          |

\* THE RL-3 ZONE HAS BEEN EXCLUDED FROM THE PURD CALCULATIONS, AREA RESERVED FOR POTENTIAL FUTURE BUILDOUT

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Suite 200  
Bedford, NH 03110  
603.391.3900

#### Civil Engineer (VHB)

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603.391.3900

#### Surveyor (VHB)

Mike Hammer, L.L.S.

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#### Landscape Architect (VHB)

Erik Bednarek, RLA

101 Walnut Street

PO Box 9151

Watertown, MA 02471

617.924.1770

#### Architect

Studio Integrate

73 Commercial Street,

London E1, England

0203.722.7358

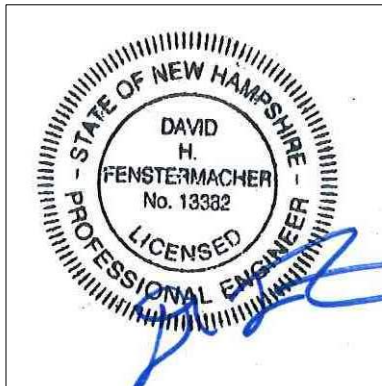
#### Wetland Scientist (Goddard)

Scott G. Goddard

291 Main Street

Suite 8

Northborough, MA 01532





### Legend

| Exist. | Prop. |                                    | Exist.                 | Prop.                  |                                |
|--------|-------|------------------------------------|------------------------|------------------------|--------------------------------|
|        |       | PROPERTY LINE                      |                        |                        | CONCRETE                       |
|        |       | PROJECT LIMIT LINE                 |                        |                        | HEAVY DUTY PAVEMENT            |
|        |       | RIGHT-OF-WAY/PROPERTY LINE         |                        |                        | BUILDINGS                      |
|        |       | EASEMENT                           |                        |                        | RIPRAP                         |
|        |       | BUILDING SETBACK                   |                        |                        | CONSTRUCTION EXIT              |
|        |       | PARKING SETBACK                    |                        |                        |                                |
|        |       | BASELINE                           | 27.35 TC x             | 27.35 TC x             | TOP OF CURB ELEVATION          |
|        |       | CONSTRUCTION LAYOUT                | 28.85 BC x             | 28.85 BC x             | BOTTOM OF CURB ELEVATION       |
|        |       | ZONING LINE                        | 132.75 x               | 132.75 x               | SPOT ELEVATION                 |
|        |       | TOWN LINE                          | 45.0 TW x<br>38.5 BW x | 45.0 TW x<br>38.5 BW x | TOP & BOTTOM OF WALL ELEVATION |
|        |       | LIMIT OF DISTURBANCE               |                        |                        | BORING LOCATION                |
|        |       | WETLAND LINE WITH FLAG             |                        |                        | TEST PIT LOCATION              |
|        |       | FLOODPLAIN                         |                        |                        | MONITORING WELL                |
|        |       | BORDERING LAND SUBJECT TO FLOODING |                        |                        | UNDERDRAIN                     |
|        |       | WETLAND BUFFER ZONE                |                        |                        | DRAIN                          |
|        |       | NO DISTURB ZONE                    |                        |                        | ROOF DRAIN                     |
|        |       | 200' RIVERFRONT AREA               |                        |                        | SEWER                          |
|        |       |                                    |                        |                        | FORCE MAIN                     |
|        |       |                                    |                        |                        | OVERHEAD WIRE                  |
|        |       | EDGE OF PAVEMENT                   |                        |                        | WATER                          |
|        |       | BITUMINOUS BERM                    |                        |                        | FIRE PROTECTION                |
|        |       | BITUMINOUS CURB                    |                        |                        | DOMESTIC WATER                 |
|        |       | CONCRETE CURB                      |                        |                        | GAS                            |
|        |       | CURB AND GUTTER                    |                        |                        | ELECTRIC                       |
|        |       | EXTRUDED CONCRETE CURB             |                        |                        | STEAM                          |
|        |       | MONOLITHIC CONCRETE CURB           |                        |                        | TELEPHONE                      |
|        |       | PRECAST CONC. CURB                 |                        |                        | FIRE ALARM                     |
|        |       | SLOPED GRAN. EDGING                |                        |                        | CABLE TV                       |
|        |       | VERT. GRAN. CURB                   |                        |                        | CATCH BASIN CONCENTRIC         |
|        |       | LIMIT OF CURB TYPE                 |                        |                        | CATCH BASIN ECCENTRIC          |
|        |       | SAWCUT                             |                        |                        | DOUBLE CATCH BASIN CONCENTRIC  |
|        |       |                                    |                        |                        | DOUBLE CATCH BASIN ECCENTRIC   |
|        |       |                                    |                        |                        | GUTTER INLET                   |
|        |       |                                    |                        |                        | DRAIN MANHOLE CONCENTRIC       |
|        |       |                                    |                        |                        | DRAIN MANHOLE ECCENTRIC        |
|        |       |                                    |                        |                        | TRENCH DRAIN                   |
|        |       |                                    |                        |                        | PLUG OR CAP                    |
|        |       |                                    |                        |                        | CLEANOUT                       |
|        |       |                                    |                        |                        | FLARED END SECTION             |
|        |       |                                    |                        |                        | HEADWALL                       |
|        |       |                                    |                        |                        | SEWER MANHOLE CONCENTRIC       |
|        |       |                                    |                        |                        | SEWER MANHOLE ECCENTRIC        |
|        |       |                                    |                        |                        | CURB STOP & BOX                |
|        |       |                                    |                        |                        | WATER VALVE & BOX              |
|        |       |                                    |                        |                        | TAPPING SLEEVE, VALVE & BOX    |
|        |       |                                    |                        |                        | FIRE DEPARTMENT CONNECTION     |
|        |       |                                    |                        |                        | FIRE HYDRANT                   |
|        |       |                                    |                        |                        | WATER METER                    |
|        |       |                                    |                        |                        | POST INDICATOR VALVE           |
|        |       |                                    |                        |                        | WATER WELL                     |
|        |       |                                    |                        |                        | GAS GATE                       |
|        |       |                                    |                        |                        | GAS METER                      |
|        |       |                                    |                        |                        | ELECTRIC MANHOLE               |
|        |       |                                    |                        |                        | ELECTRIC METER                 |
|        |       |                                    |                        |                        | LIGHT POLE                     |
|        |       |                                    |                        |                        | TELEPHONE MANHOLE              |
|        |       |                                    |                        |                        | TRANSFORMER PAD                |
|        |       |                                    |                        |                        | UTILITY POLE                   |
|        |       |                                    |                        |                        | GUY POLE                       |
|        |       |                                    |                        |                        | GUY WIRE & ANCHOR              |
|        |       |                                    |                        |                        | HAND HOLE                      |
|        |       |                                    |                        |                        | PULL BOX                       |
|        |       |                                    |                        |                        | MATCHLINE                      |

## Abbreviations

| General |                                        |
|---------|----------------------------------------|
| ABAN    | ABANDON                                |
| ACR     | ACCESSIBLE CURB RAMP                   |
| ADJ     | ADJUST                                 |
| APPROX  | APPROXIMATE                            |
| BIT     | BITUMINOUS                             |
| BS      | BOTTOM OF SLOPE                        |
| BWLL    | BROKEN WHITE LANE LINE                 |
| CONC    | CONCRETE                               |
| DYCL    | DOUBLE YELLOW CENTER LINE              |
| EL      | ELEVATION                              |
| ELEV    | ELEVATION                              |
| EVC     | ELECTRIC VEHICLE CAPABLE PARKING SPACE |
| EVR     | ELECTRIC VEHICLE READY PARKING SPACE   |
| EX      | EXISTING                               |
| FDN     | FOUNDATION                             |
| FFE     | FIRST FLOOR ELEVATION                  |
| GRAN    | GRANITE                                |
| GFE     | GARAGE FLOOR ELEVATION                 |
| GTD     | GRADE TO DRAIN                         |
| LA      | LANDSCAPE AREA                         |
| LOD     | LIMIT OF DISTURBANCE                   |
| MAX     | MAXIMUM                                |
| MIN     | MINIMUM                                |
| NIC     | NOT IN CONTRACT                        |
| NTS     | NOT TO SCALE                           |
| PERF    | PERFORATED                             |
| PROP    | PROPOSED                               |
| REM     | REMOVE                                 |
| RET     | RETAIN                                 |
| R&D     | REMOVE AND DISPOSE                     |
| R&R     | REMOVE AND RESET                       |
| SWEL    | SOLID WHITE EDGE LINE                  |
| SWLL    | SOLID WHITE LANE LINE                  |
| TS      | TOP OF SLOPE                           |
| TYP     | TYPICAL                                |
| Utility |                                        |
| AD      | AREA DRAIN                             |
| CB      | CATCH BASIN                            |
| CMP     | CORRUGATED METAL PIPE                  |
| CO      | CLEANOUT                               |
| DCB     | DOUBLE CATCH BASIN                     |
| DMH     | DRAIN MANHOLE                          |
| CIP     | CAST IRON PIPE                         |
| COND    | CONDUIT                                |
| DIP     | DUCTILE IRON PIPE                      |
| DW      | DRYWELL                                |
| FA      | FIRE ALARM                             |
| FES     | FLARED END SECTION                     |
| FM      | FORCE MAIN                             |
| F&G     | FRAME AND GRATE                        |
| F&C     | FRAME AND COVER                        |
| GI      | GUTTER INLET                           |
| GT      | GREASE TRAP                            |
| HDPE    | HIGH DENSITY POLYETHYLENE PIPE         |
| HH      | HANDHOLE                               |
| HW      | HEADWALL                               |
| HYD     | HYDRANT                                |
| INV     | INVERT ELEVATION                       |
| I=      | INVERT ELEVATION                       |
| LP      | LIGHT POLE                             |
| MES     | METAL END SECTION                      |
| PIV     | POST INDICATOR VALVE                   |
| PWW     | PAVED WATER WAY                        |
| PVC     | POLYVINYLCHLORIDE PIPE                 |
| RCP     | REINFORCED CONCRETE PIPE               |
| R=      | RIM ELEVATION                          |
| RIM=    | RIM ELEVATION                          |
| SMH     | SEWER MANHOLE                          |
| TSV     | TAPPING SLEEVE, VALVE AND BOX          |
| UG      | UNDERGROUND                            |
| UGE/T   | UNDERGROUND ELECTRIC/TELECOM           |
| UP      | UTILITY POLE                           |

## Notes

## General

1. THE PURPOSE OF THESE SITE PLANS ARE TO SHOW A PROPOSED SITE DESIGN FOR THE PERMITTING OF A MULTI-FAMILY RESIDENTIAL PROJECT.
2. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
4. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
5. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6-INCHES LOAM AND SEED.
6. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
7. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS, WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
8. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
9. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
10. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
12. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
13. DAMAGE RESULTING FROM CONSTRUCTION LOADS AND ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
14. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
15. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP PROGRAM AND EPA JURISDICTION). PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS. CONTRACTOR SHALL CONFIRM THE PLAN HAS ALSO FILED A NOTICE OF INTENT WITH THE EPA.
16. SNOW STORAGE LOCATIONS SHOWN ON LAYOUT AND MATERIALS PLAN. FUTURE SNOW REMOVAL AT THE FACILITY WILL FOLLOW THE CURRENT SNOW MANAGEMENT PLAN TO REMOVE SNOW TO REMOTE LOCATIONS AS NECESSARY.
17. TREE CLEARING SHALL NOT BE CONDUCTED DURING JUNE 1 TO JULY 31 IN ORDER TO MINIMIZE ADVERSE IMPACTS TO THE NORTHERN LONG EARED BAT.
18. CONTRACTOR TO FOLLOW STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (NHDOT) AND GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES (AASHTO) FOR CONSTRUCTIONS STANDARDS,

## Utilities

1. THE UTILITY COMPANIES SERVICING THE PROJECT AREA ARE:

A. WATER: CITY OF LEBANON  
B. SEWER: CITY OF LEBANON  
C. ELECTRIC: LIBERTY UTILITIES  
D. TELEPHONE: CONSOLIDATED COMMUNICATIONS  
E. CABLE TV: COMCAST  
F. GAS: NONE

2. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
3. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT. COORDINATE WITH CITY OF LEBANON FOR PUBLIC UTILITY INSTALLATION AND CONNECTION.
4. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
5. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE POLE BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
  - A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
  - B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
  - C. LANDSCAPE, LAWN AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TOPER EARTH TO THE RIM ELEVATION.
6. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT. COORDINATE WITH CITY OF LEBANON FOR PUBLIC UTILITY INSTALLATION AND CONNECTION.
7. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
8. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:

UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:

- A. WATER PIPES SHALL BE CEMENT LINED DUCTILE IRON CLASS 52.
- B. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE SDR 35.
- C. STORM DRAINAGE PIPES SHALL BE SMOOTH INTERIOR DUAL WALL HIGH DENSITY POLYETHYLENE (HDPE).

8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS, FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
11. CONTRACTOR TO NOTIFY ENGINEER IN ADVANCE OF ANY INSTALLATION OF UNDERGROUND DETENTION, INFILTRATION OR FILTERING SYSTEMS. A LETTER SIGNING BY A QUALIFIED ENGINEER MUST BE PROVIDED TO DES STATING THAT THE INDIVIDUAL OBSERVED ANY UNDERGROUND DETENTION, INFILTRATION, OR FILTERING SYSTEMS PRIOR TO THE WHETHER, IN HER PROFESSIONAL OPINION, THE SYSTEM(S) CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.

### Layout and Materials

## Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. CURB RADII ARE 3 FEET UNLESS OTHERWISE NOTED.
3. CURBING SHALL BE PRECAST CONCRETE (PCC) WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING BUILDING ENTRANCES, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A LICENSED LAND SURVEYOR (LLS).
6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

## Demolition

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REMOVE AND DISPOSE OF EXISTING UTILITIES, STRUCTURES, AND MATERIALS TO A MINIMUM DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING REMOVAL OF EXISTING COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL. TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
5. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL HAVE NO LIABILITY FOR ANY AND ALL COSTS, EXPENSE, DELAY AND INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH; MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AVOIDING OR MINIMIZING THE ISSUES OF DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

### Existing Conditions Information

1. BASE PLAN: PROVIDED BY VHB, INC., DATED NOVEMBER, 2022. FIELD SURVEY OF PROJECT LOCUS PROVIDED BY VHB, IN SEPTEMBER THRU NOVEMBER, 2022.
2. TOPOGRAPHY: ELEVATIONS ARE BASED ON NAVD 1988.

## Local Permits

1. NOTICE OF ACTION ISSUED BY THE PLANNING BOARD: PENDING
2. BUILDING PERMIT TO BE SUBMITTED.
3. WATER USE PERMIT TO BE SUBMITTED
4. SEWER USE PERMIT TO BE SUBMITTED

## State Permits

1. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) ALTERATION OF TERRAIN PERMIT AOT-TO BE SUBMITTED.
2. NHDES SEWER CONNECTION PERMIT TO BE SUBMITTED.
3. NHDES WETLANDS AND NON-SITE SPECIFIC PERMIT TO BE SUBMITTED.

## Federal Permits

1. US EPA NPDES CONSTRUCTION GENERAL PERMIT (CGP) TO BE SUBMITTED

## Document Use

1. THESE PLANS AND CORRESPONDING CAD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATIC CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

## New Hampshire Fish and Game

1. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT [NHFGreiwew@wildlife.nh.gov](mailto:NHFGreiwew@wildlife.nh.gov). EMAIL SUBJECT LINE: \_\_\_\_\_
2. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
3. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY. TO ENSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
4. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.
5. ENV-WQ 1506.15 REQUIRES THAT:
  - 5.1. ALL MANUFACTURED EROSION AND SEDIMENT CONTROLS PRODUCTIONS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCH. REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.



2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appvd. |
|-----|-----------------------------|----------|--------|
| 1   | Response to Comments Update | 08/06/24 | DF     |
|     |                             |          |        |
|     |                             |          |        |
|     |                             |          |        |
|     |                             |          |        |

|             |      |            |     |
|-------------|------|------------|-----|
| Designed by | TMD  | Checked by | MJV |
| Issued for  | Date |            |     |

Permitting May 10, 2024

Not Approved for Construction

## Legend and General Notes

Drawing Number

# C1.0

Sheet 1 of 50

Project Number  
**52933.00**

Page 13 of 60





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
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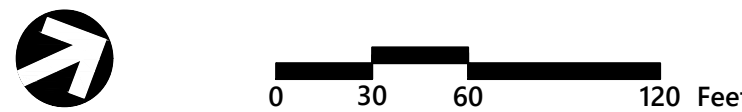
MAP THEME LEGENDS

ZONING DISTRICT

- RL3 - RURAL LAND 3
- RL2 - RURAL LAND 2
- RL1 - RURAL LAND 1
- R1 - RESIDENTIAL 1
- R2 - RESIDENTIAL 2
- R3 - RESIDENTIAL 3
- RO - RESIDENTIAL OFFICE
- RO1 - RESIDENTIAL OFFICE 1
- GC- GENERAL COMMERCIAL
- GC-1 - GENERAL COMMERCIAL 1
- CB - CENTRAL BUSINESS
- IND-L - INDUSTRIAL LIGHT
- IND-RA - INDUSTRIAL RAIL ACCESS
- IND-H - INDUSTRIAL HEAVY
- MC - MEDICAL CENTER
- PB - PROFESSIONAL BUSINESS
- LD - LEBANON DOWNTOWN

CONSERVATION LANDS AND TRAILS

- TRAILS
- LEBANON CONSERVATION & PUBLIC LANDS PROTECTION LEVEL
- Limited
  - Permanent
  - Sub-Div Open Space
- NH CONSERVATION LAND
- 125 Feet
- PROJECT LIMIT OF WORK
- ■ ■ ■ ■ ■ ■ ■ ■ ■



The Brickyard  
Residential Development

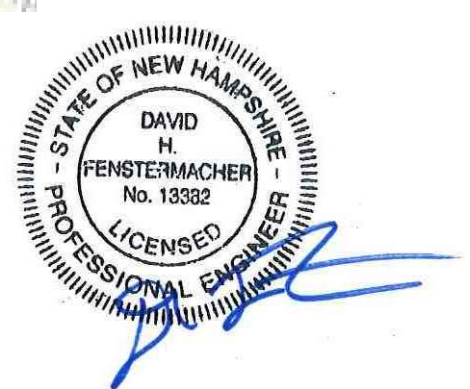
174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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|-----|------------------------------|----------|--------|
| 1   | Completeness Review Comments | 07/02/24 | DF     |
| 2   | Response to Comments Update  | 08/06/24 | DF     |

Designed by TMD Checked by MJV

Issued for Permitting Date May 10, 2024

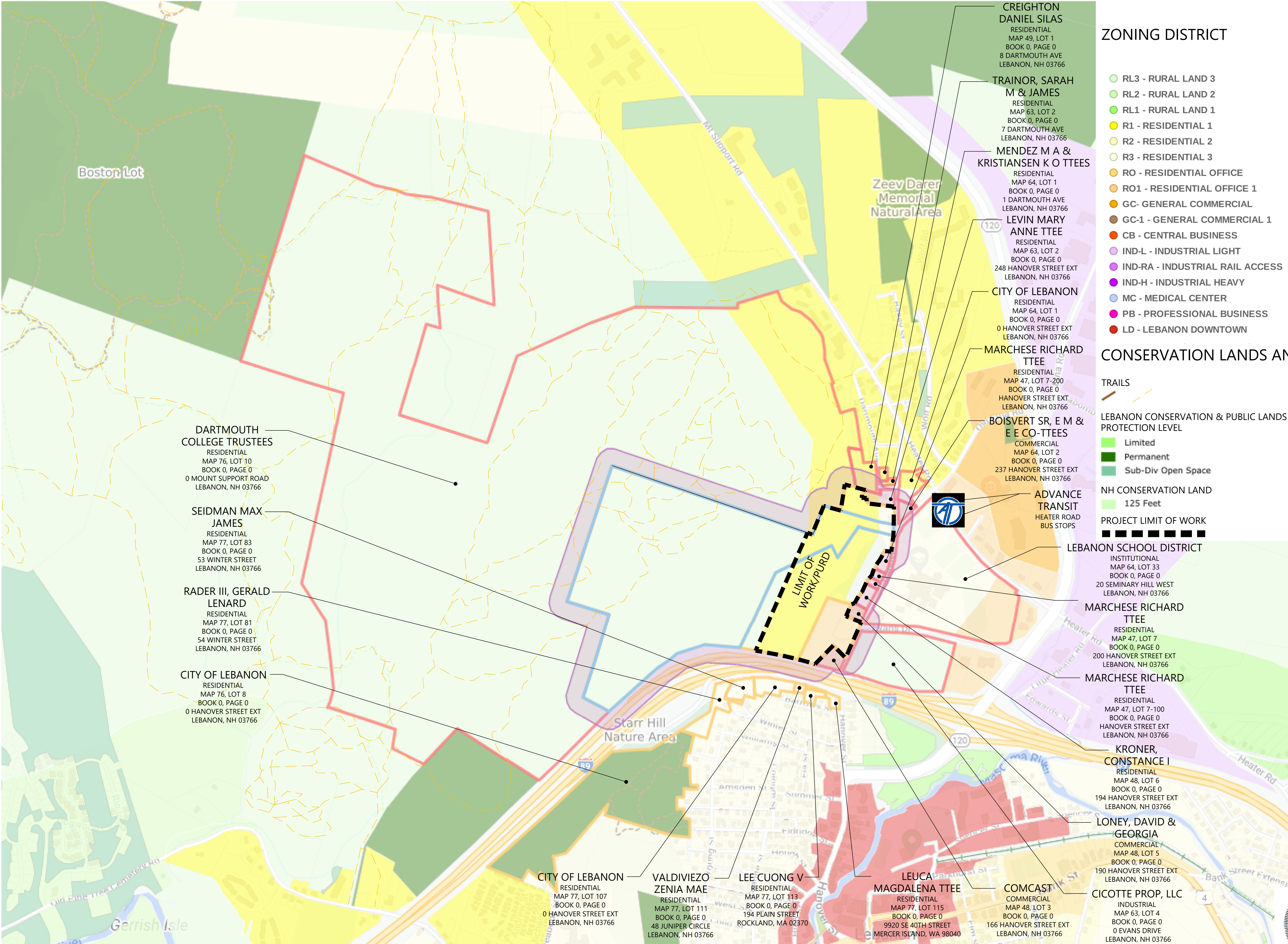
Not Approved for Construction  
Drawing Title  
Abutter and Zoning Plan



C1.1

Sheet 2 of 50

Project Number  
52933.00

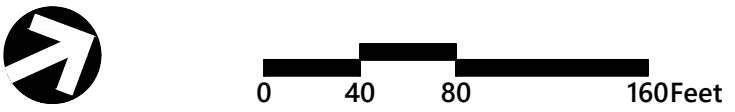




Open Space Calculations

| Zone                         | Total Area (SF) | % Required | Open Space Required   |
|------------------------------|-----------------|------------|-----------------------|
| RESIDENTIAL 1 (R-1)          | 1,252,605       | 30         | 375,782 SF (8.62 AC)  |
| RESIDENTIAL-OFFICE-1 (R-O-1) | 286,532         | 30         | 85,960 SF (1.97 AC)   |
| RESIDENTIAL 3 (R-3)          | 123,849         | 50         | 61,925 SF (1.42 AC)   |
| TOTAL OPEN SPACE REQUIRED    |                 |            | 523,666 SF (12.02 AC) |
| TOTAL OPEN SPACE PROVIDED    |                 |            | 523,666 SF (12.02 AC) |

PROVIDED OPEN SPACE SHOULD MATCH OR SLIGHTLY EXCEED REQUIRED SO THAT IT IS NOT A FUTURE DEVELOPMENT LIMITATION.



The Brickyard  
Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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|-------------|--------------|
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| TMD         | MJV          |
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Open Space Plan



C1.2

Sheet 3 of 50

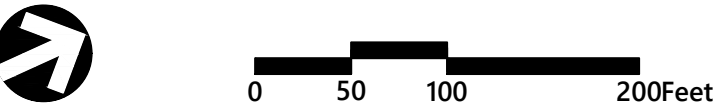
Project Number  
52933.00





Legend

- PEDESTRIAN PATH TO PUBLIC R.O.W.
- VEHICLE PATH TO PUBLIC R.O.W.
- EXISTING PEDESTRIAN PATHS
- UPPER VALLEY MOUNTAIN BIKE ASSOCIATION TRAILS
- POTENTIAL FUTURE PEDESTRIAN PATH



The Brickyard  
Residential Development

174 Hanover Street Extension  
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| Designed by | TMD | Checked by | MJV          |
| Issued for  |     | Date       | May 10, 2024 |

Permitting

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Access and Circulation Plan

Drawing Number

C1.3

Sheet

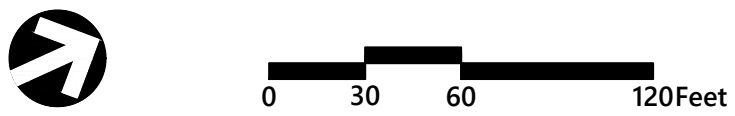
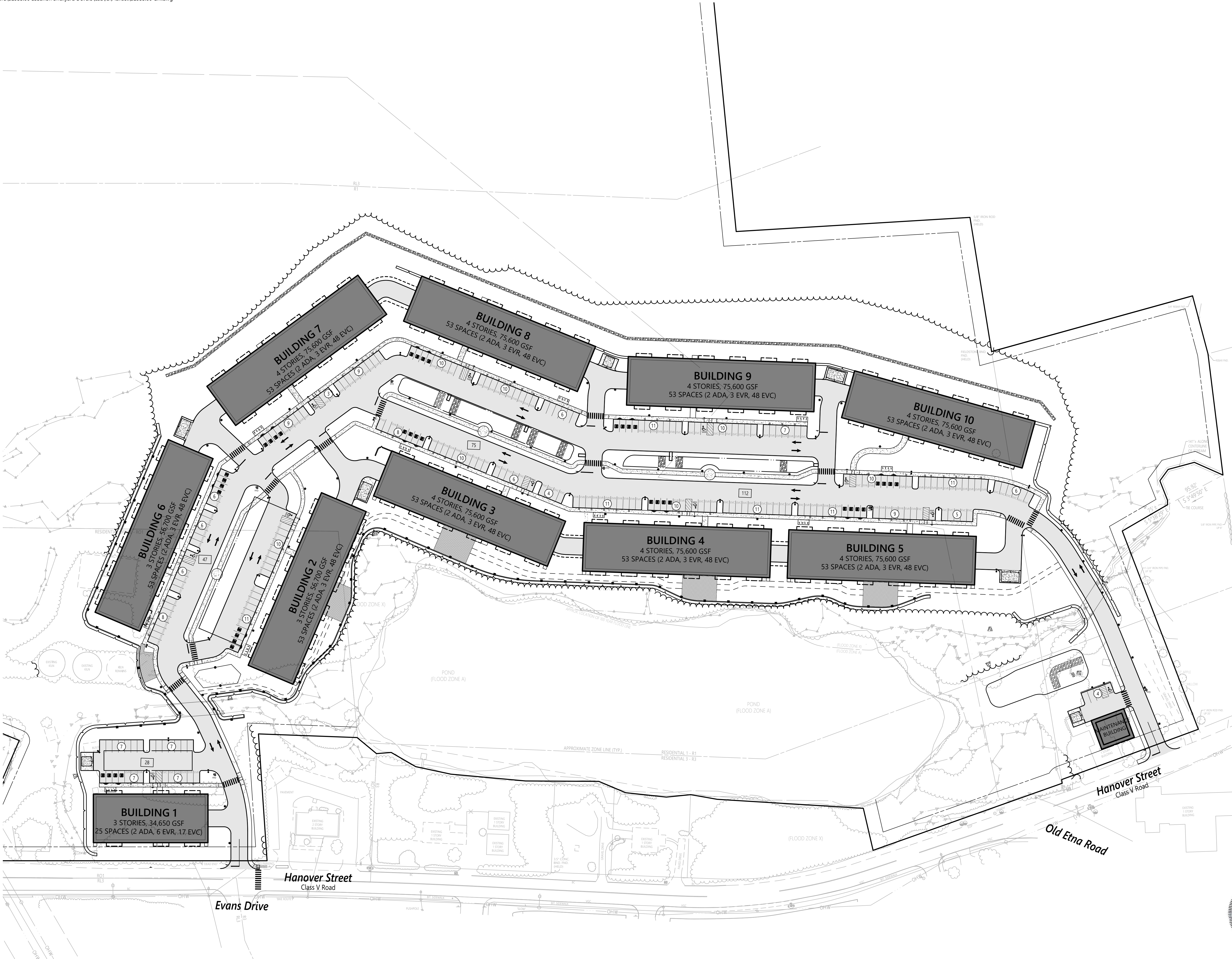
of

4 50

Project Number

52933.00





# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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|-------------|--------------|
| Designed by | Checked by   |
| TMD         | MJV          |
| Issued for  | Date         |
| Permitting  | May 10, 2024 |

Not Approved for Construction  
Drawing Title  
Overall Site Plan



C1.4

Sheet 5 of 50

Project Number  
52933.00





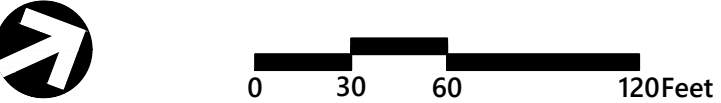
2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

ABUTTING PROPERTIES ACROSS INTERSTATE 89 INCLUDE THE FOLLOWING:

1. CITY OF LEBANON  
MAP 76, LOT 8  
BOOK 0, PAGE 0  
51 NORTH PARK STREET  
LEBANON, NH 03766
2. RADER III, GERALD LENARD  
MAP 77, LOT 81  
BOOK 0, PAGE 0  
54 WINTER STREET  
LEBANON, NH 03766
3. SEIDMAN, MAX JAMES  
MAP 77, LOT 83  
BOOK 0, PAGE 0  
53 WINTER STREET  
LEBANON, NH 03766
4. CITY OF LEBANON  
MAP 77, LOT 107  
BOOK 0, PAGE 0  
51 NORTH PARK STREET  
LEBANON, NH 03766
5. VALDIVIEZO ZENIA MAE  
MAP 77, LOT 111  
BOOK 0, PAGE 0  
48 JUNIPER CIRCLE  
LEBANON, NH 03766
6. LEE, CUONG V  
MAP 77, LOT 113  
BOOK 0, PAGE 0  
194 PLAIN STREET  
ROCKLAND, MA 02370
7. LEUCA MAGDALENA TTEE  
MAP 77, LOT 115  
BOOK 0, PAGE 0  
9920 SE 40TH STREET  
MERCER ISLAND, WA 98040

### Notes

1. EXISTING BUS STOP AT CORNER OF HEATER RD AND OLD ETNA ROAD IS APPROXIMATELY 0.20 MILES AWAY FROM PROJECT SITE.
2. LOTS 48-01, 48-02, 48-04, AND 63-01 ARE TO BE CONSOLIDATED INTO ONE PARCEL



## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Checked by MJV  
Issued for Permitting  
Date May 10, 2024

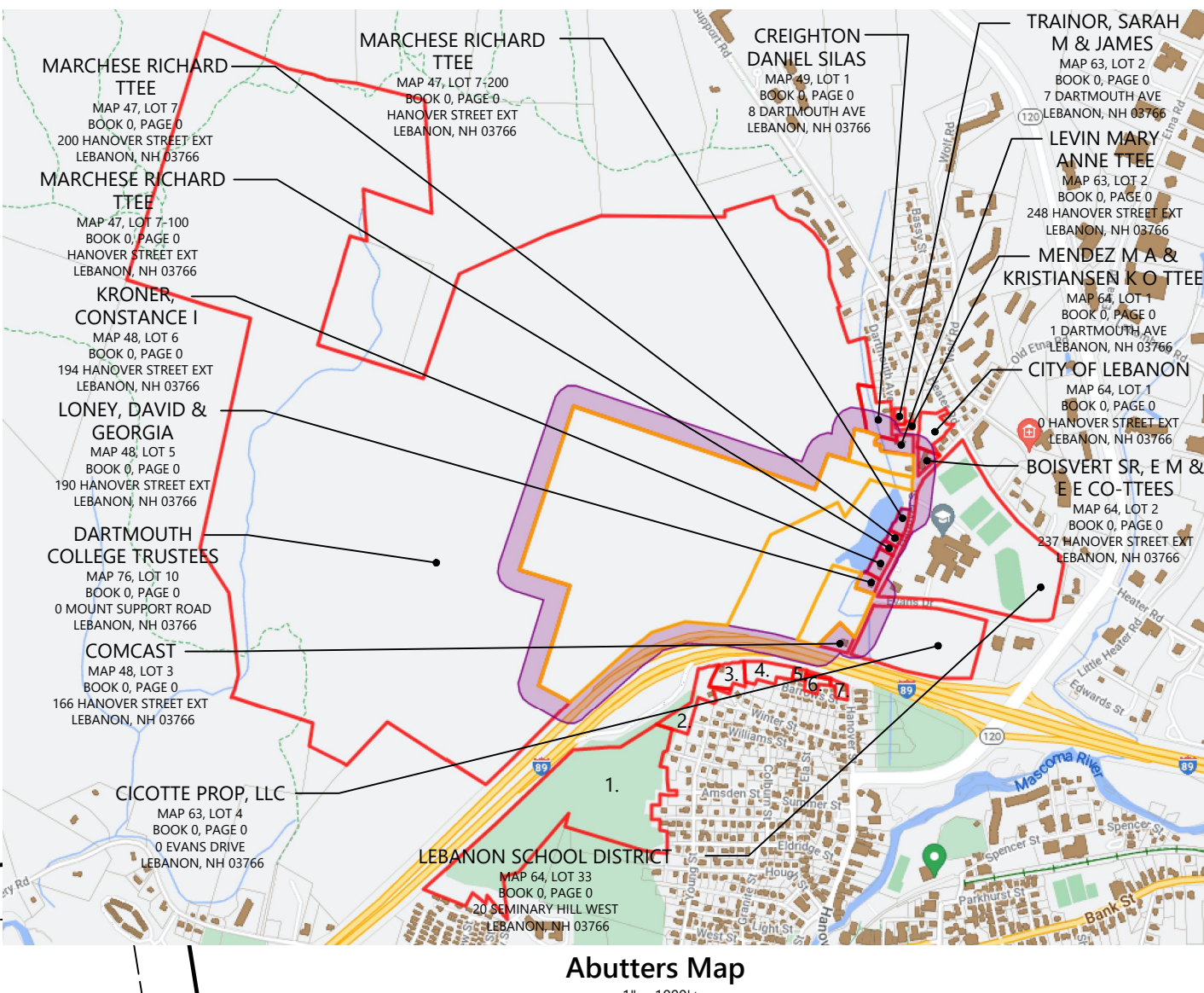
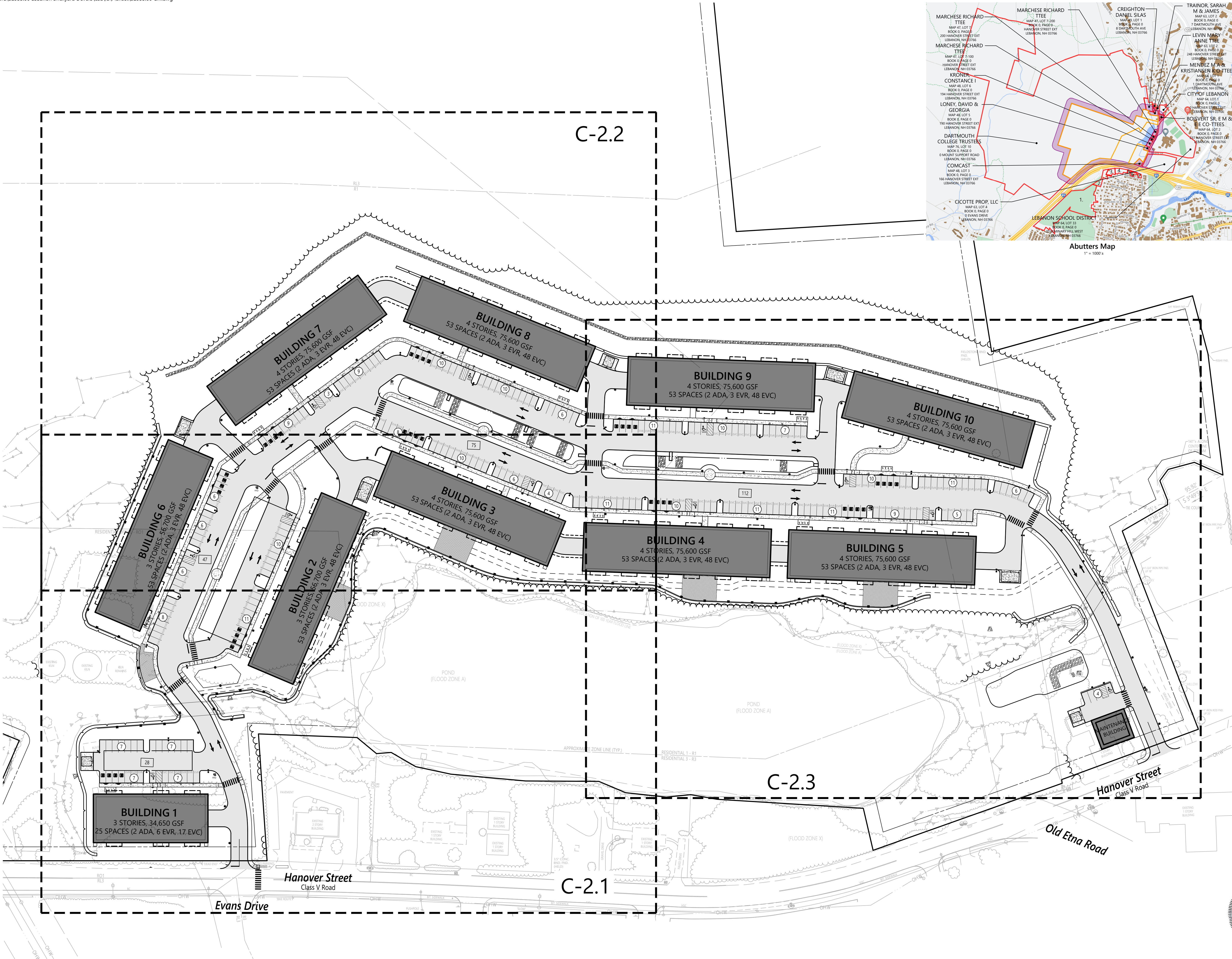
Not Approved for Construction  
Drawing Title  
Overall Layout and  
Materials Plan



C2.0

Sheet 6 of 50

Project Number  
52933.00







2 Bedford Farms Drive  
Suite 200  
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603.391.3900



### Sign Summary

| M.U.T.C.D. Number | Specification Width | Height | Desc.                     |
|-------------------|---------------------|--------|---------------------------|
| R1-1              | 30"                 | 30"    | STOP                      |
| R7-8              | 12"                 | 18"    | RESERVED PARKING          |
| R7-8P             | 12"                 | 6"     | VAN RESTRICTION           |
| D9-11B            | 12"                 | 18"    | EV CHARGING               |
| D9-11BP           | 12"                 | 12"    | ELECTRIC VEHICLE CHARGING |

SNOW STORAGE AREA



## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Designed by: TMD  
Checked by: MJV  
Issued for: Permitting  
Date: May 10, 2024

Not Approved for Construction  
Layout and Materials  
Plan 1

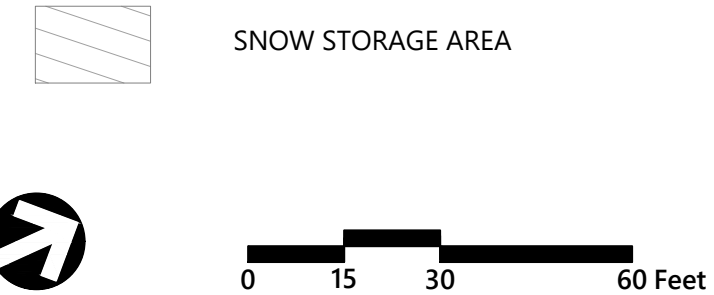
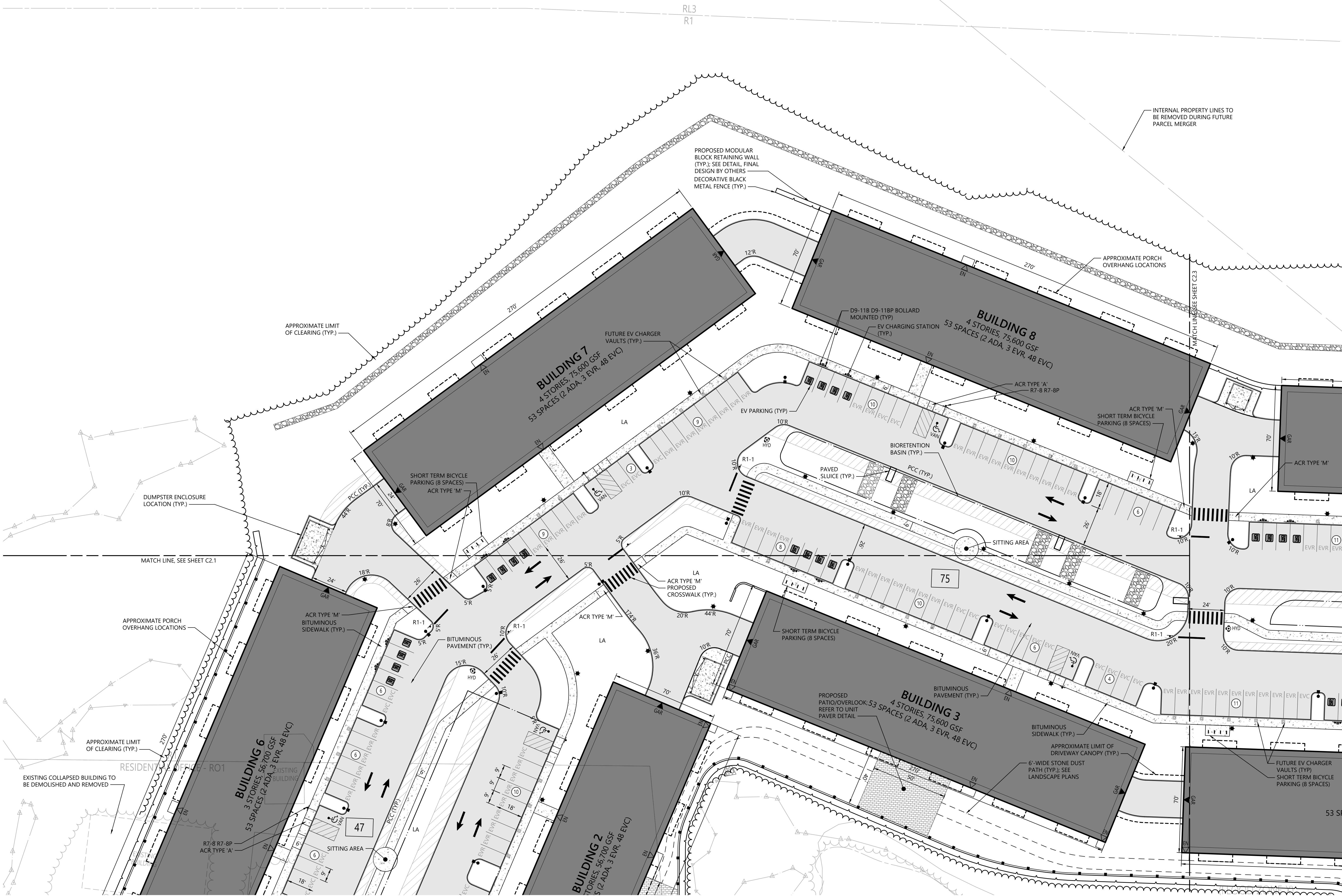
C2.1

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Project Number: 52933.00

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## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                     | Date     | Appr'd. |
|-----|------------------------------|----------|---------|
| 1   | Completeness Review Comments | 07/02/24 | DF      |
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Designed by TMD  
Checked by MJV  
Issued for Permitting  
Date May 10, 2024

Not Approved for Construction  
Drawing Title  
**Layout and Materials  
Plan 2**

Drawing Number

**C2.2**

Sheet 8 of 50

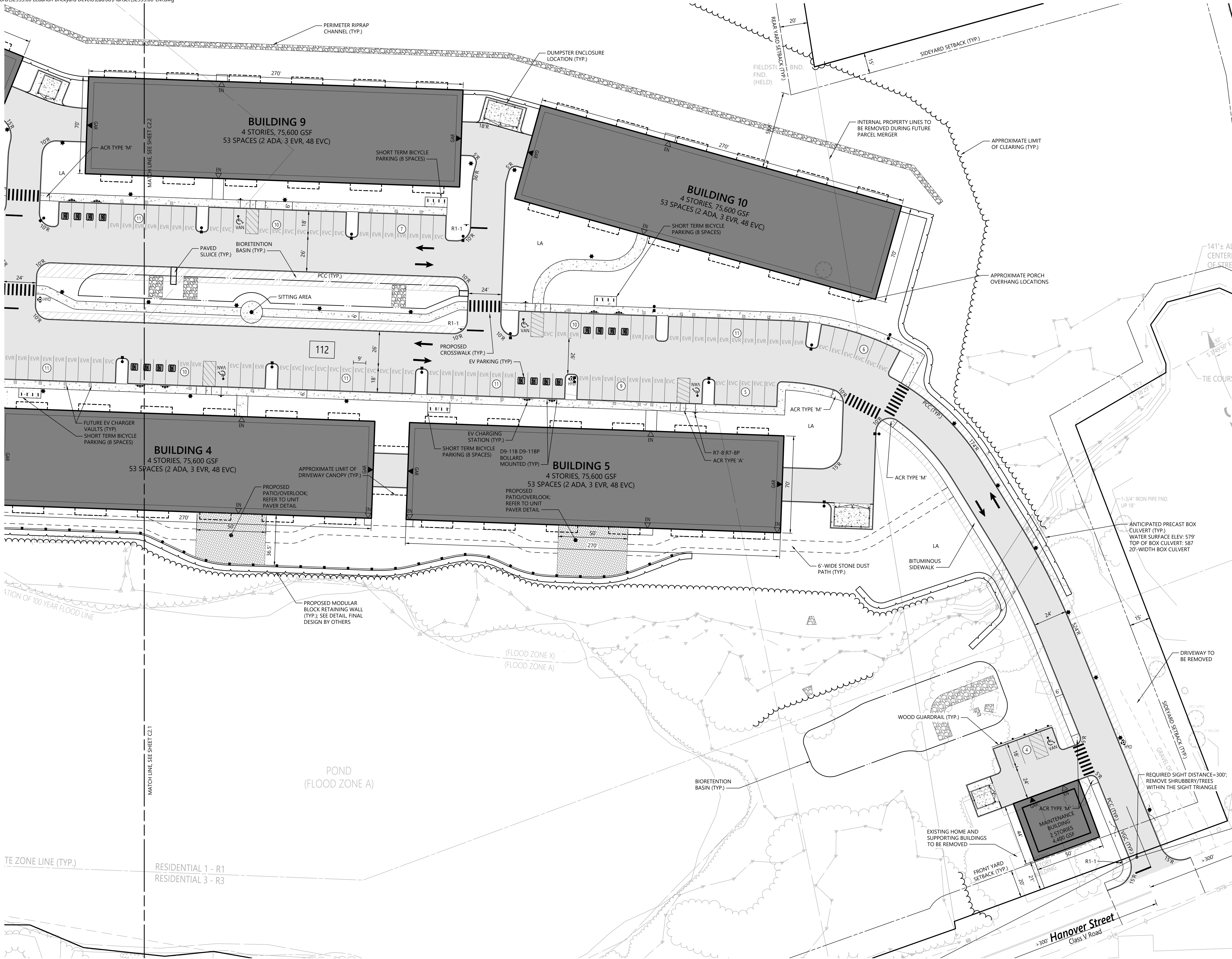
Project Number  
52933.00

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2 Bedford Farms Drive  
Suite 200  
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SNOW STORAGE AREA



## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Designed by: TMD  
Checked by: MJV

Issued for: Permitting  
Date: May 10, 2024

Not Approved for Construction  
Drawing Title: Layout and Materials  
Plan 3

Drawing Number: C2.3

Sheet 9 of 50

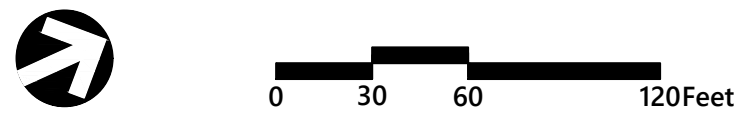
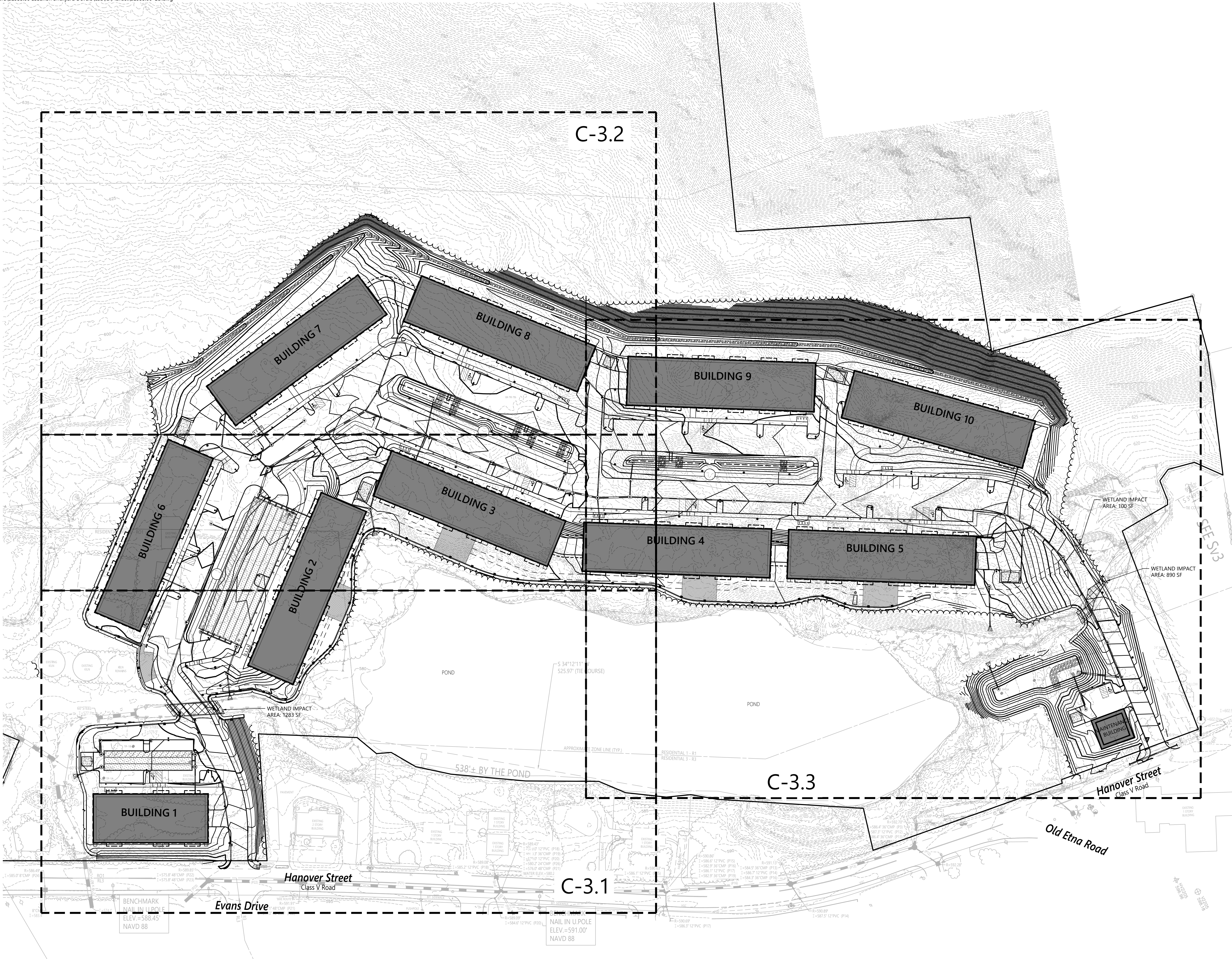
Project Number: 52933.00

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2 Bedford Farms Drive  
Suite 200  
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# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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| 1   | Response to Comments Update | 08/06/24 | DF      |

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|-------------|------------|------------|--------------|
| Designed by | TMD        | Checked by | MJV          |
| Issued for  | Permitting | Date       | May 10, 2024 |

Not Approved for Construction  
Overall Grading  
and Drainage Plan



C3.0

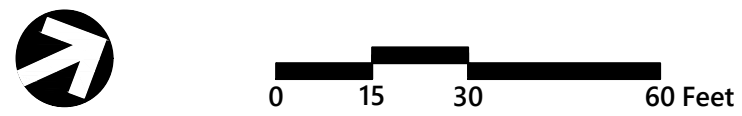
Sheet 10 of 50

Project Number  
52933.00





2 Bedford Farms Drive  
Suite 200  
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603.391.3900



# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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| 1   | Response to Comments Update | 08/06/24 | DF      |
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|-------------|-----|------------|--------------|
| Designed by | TMD | Checked by | MJV          |
| Issued for  |     | Date       | May 10, 2024 |

Permitting

Not Approved for Construction  
Drawing Title  
**Grading and Drainage  
Plan 1**

Drawing Number

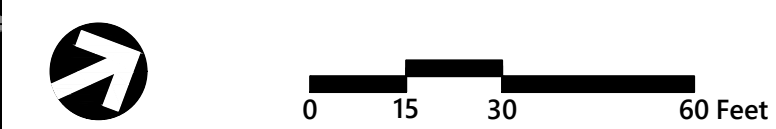
C3.1

Sheet 11 of 50

Project Number  
52933.00

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174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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|-----|-----------------------------|----------|--------|
| 1   | Response to Comments Update | 08/06/24 | DF     |

|                           |                          |
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| Issued for                | Date                     |
| <b>Permitting</b>         | <b>May 10, 2024</b>      |

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Drawing Title

**Grading and Drainage  
Plan 2**

STATE OF NEW HAMPSHIRE  
DAVID H.  
PENSTERMACHER  
No. 13302  
LICENSEE  
PERSONAL EXAMINER

Drawing Number

C3.2

Sheet \_\_\_\_\_ of \_\_\_\_\_

12 50

Project Number

52933.00





74 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Permitting May 10, 2024

Drawing Number

**C3.3**

Sheet 13 of 50

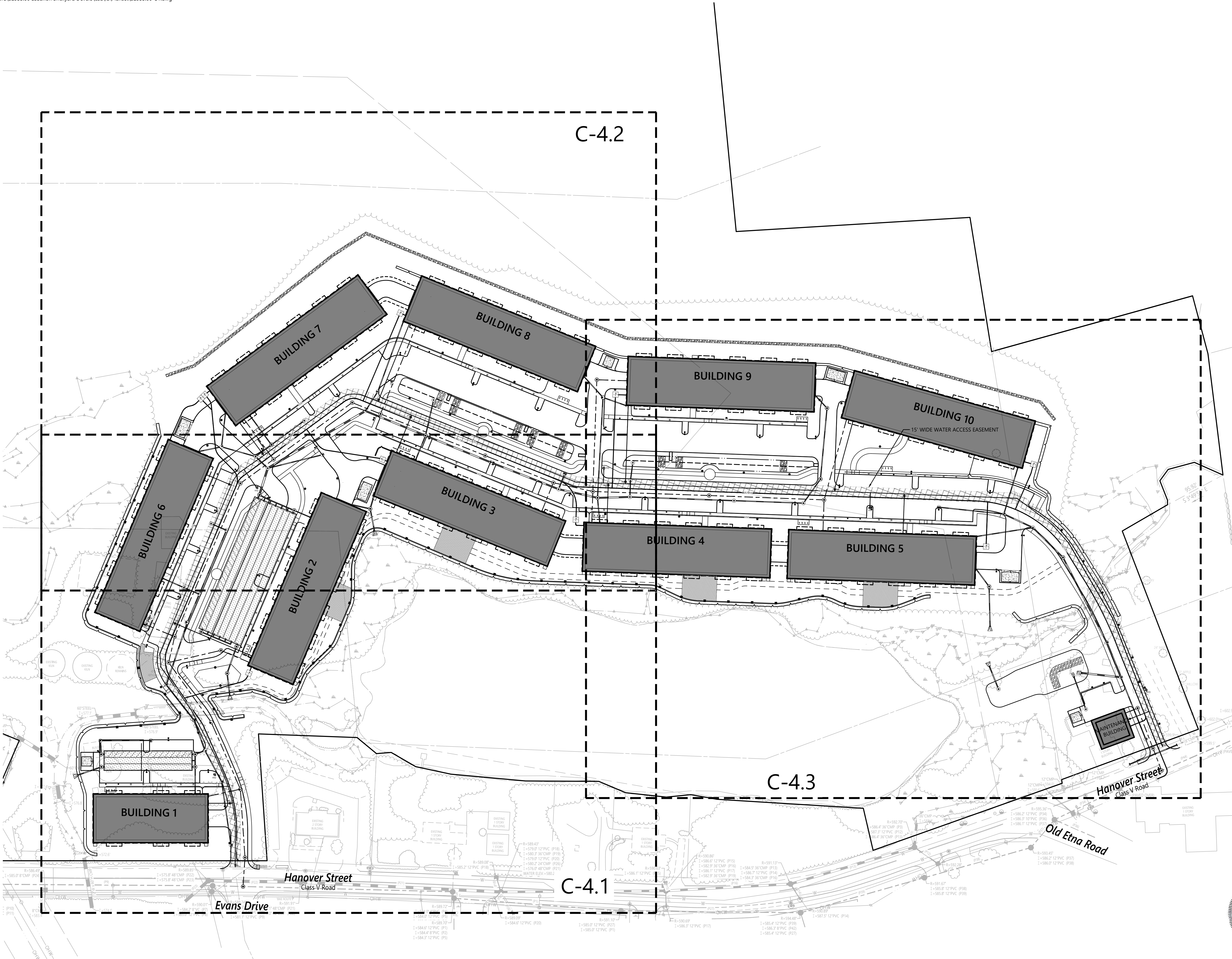
Project Number  
**52933.00**







2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



NOTE:

- 1) AN ACCESS AND MAINTENANCE EASEMENT BENEFITING THE CITY OF LEBANON WILL BE PROVIDED FOLLOWING WATER INFRASTRUCTURE ACROSS THE SITE, WHICH WILL BE OWNED BY THE CITY OF LEBANON. THE EASEMENT BOUNDARIES WILL BE PROVIDED FOR CITY REVIEW FOLLOWING COORDINATION OF BUILDING PLUMBING DESIGN FINAL DESIGN ACCEPTANCE FROM THE LEBANON FIRE DEPARTMENT.



0 30 60 120Feet

The Brickyard  
Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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|             |     |            |     |
|-------------|-----|------------|-----|
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|-------------|-----|------------|-----|

|            |            |      |              |
|------------|------------|------|--------------|
| Issued for | Permitting | Date | May 10, 2024 |
|------------|------------|------|--------------|

Not Approved for Construction

Overall Utility Plan



C4.0

Sheet 14 of 50

Project Number  
52933.00





174 Hanover Street Extension  
Lebanon, New Hampshire 03766

|             |            |
|-------------|------------|
| Designed by | Checked by |
| TMD         | MJV        |

Permitting May 10, 2024

Not Approved for Construction

# Utility Plan 1

Drawing Number

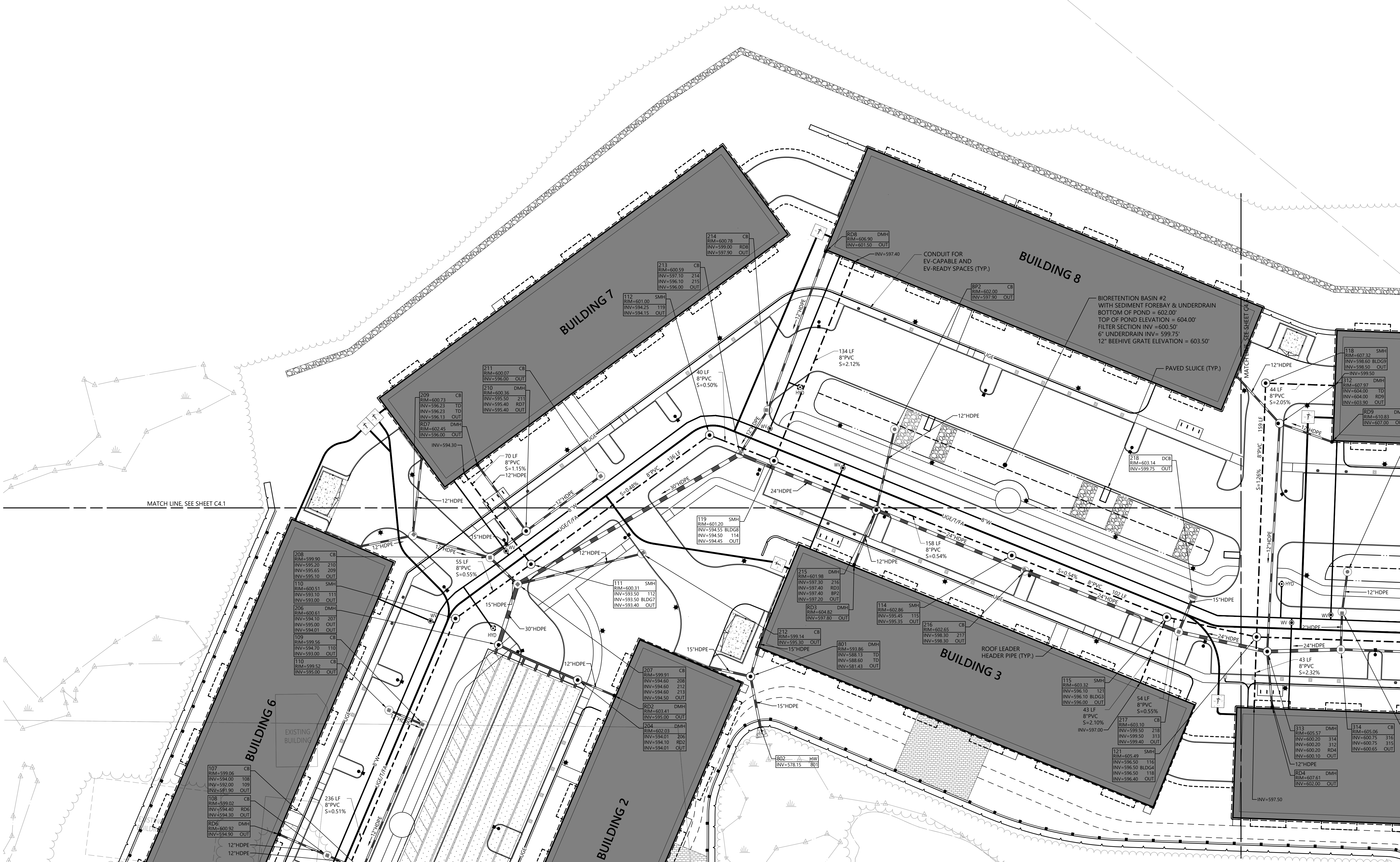
15 of 50

Number  
**33.00**





2 Bedford Farms Drive  
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## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Designed by TMD Checked by MJV

Issued for Permitting Date May 10, 2024

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Drawing Title  
**Utility Plan 2**

Drawing Number

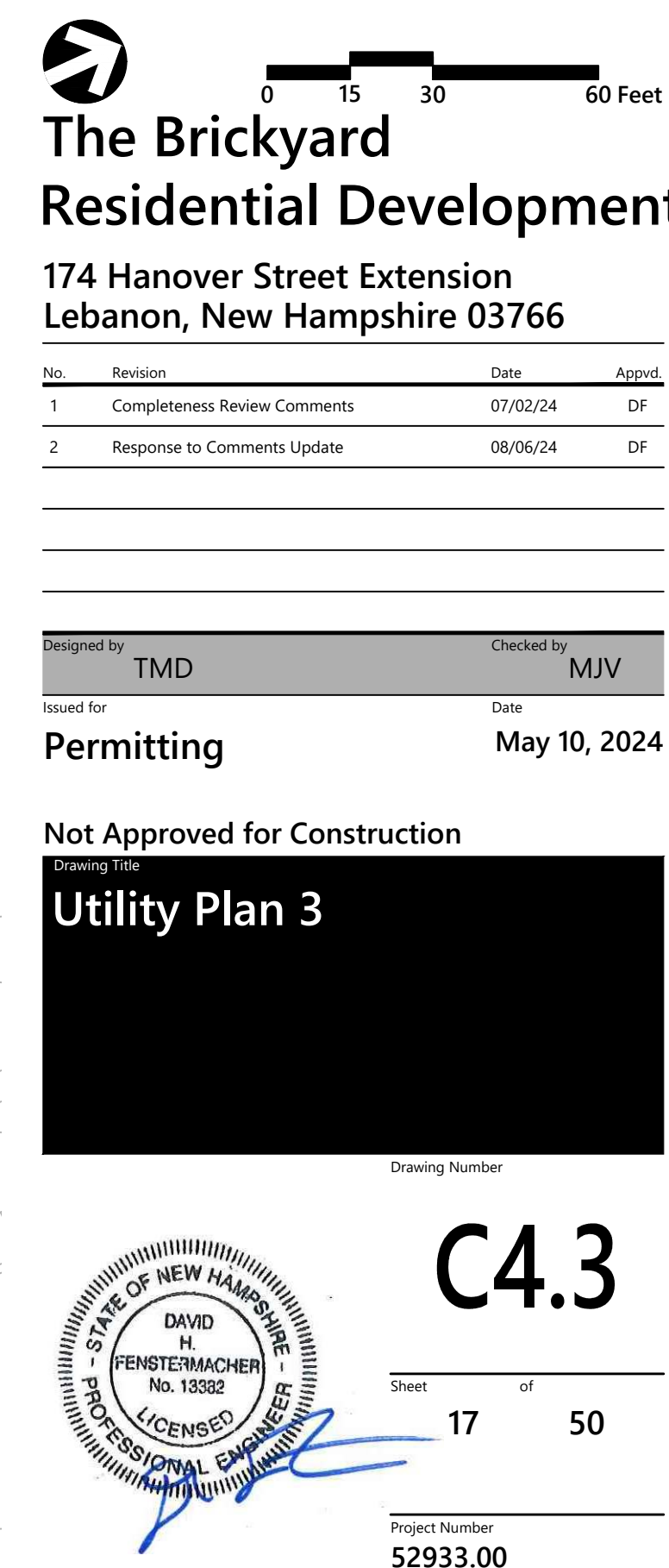
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Project Number  
52933.00

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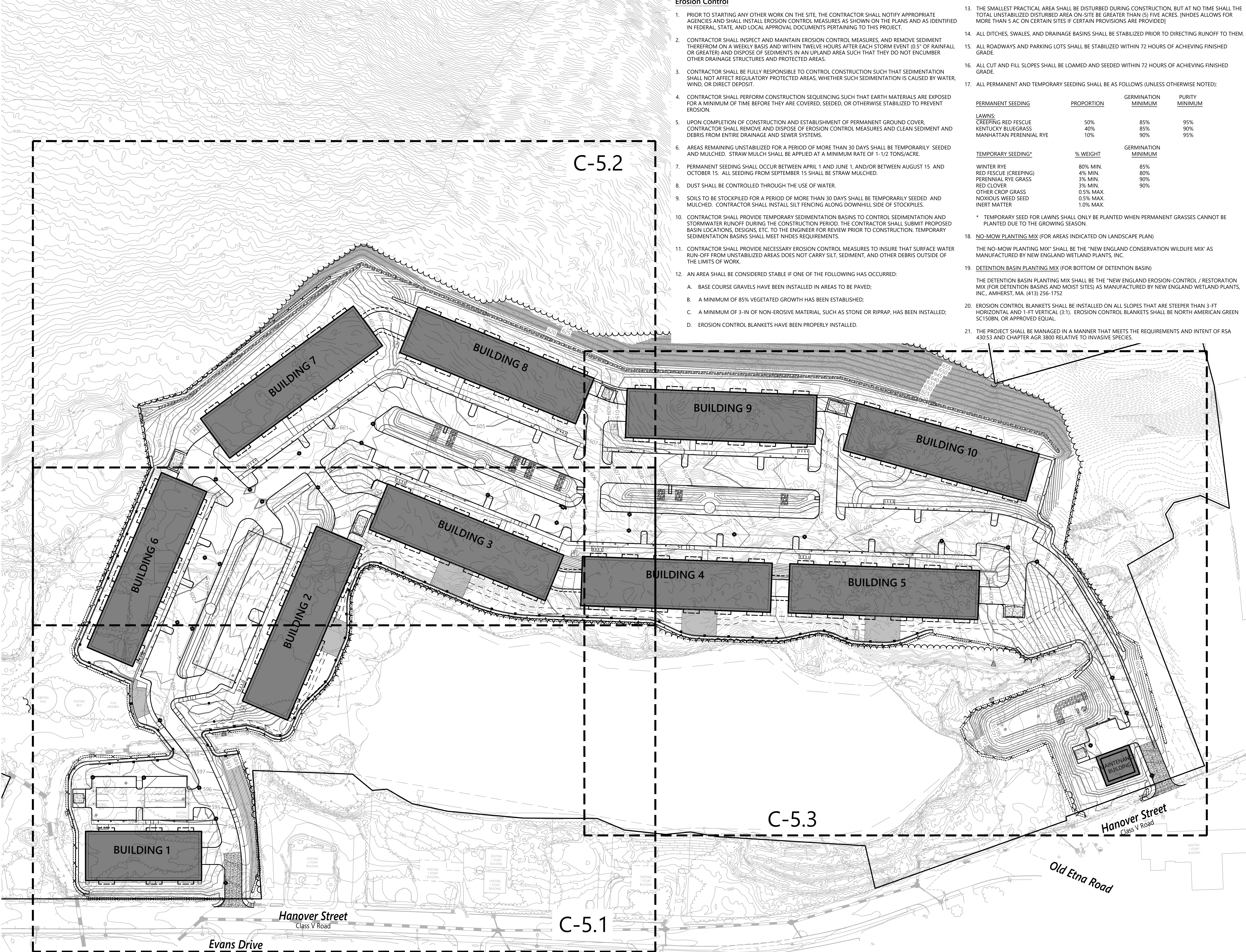








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Erosion Control

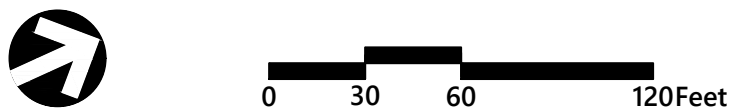
1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT (0.5" OF RAINFALL OR GREATER) AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
6. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. STRAW MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 1-1/2 TONS/ACRE.
7. PERMANENT SEEDING SHALL OCCUR BETWEEN APRIL 1 AND JUNE 1, AND/OR BETWEEN AUGUST 15 AND OCTOBER 15. ALL SEEDING FROM SEPTEMBER 15 SHALL BE STRAW MULCHED.
8. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
9. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. CONTRACTOR SHALL INSTALL SILT FENCING ALONG DOWNHILL SIDE OF STOCKPILES.
10. CONTRACTOR SHALL PROVIDE TEMPORARY SEDIMENTATION BASINS TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGNS, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. TEMPORARY SEDIMENTATION BASINS SHALL MEET NHDES REQUIREMENTS.
11. CONTRACTOR SHALL PROVIDE NECESSARY EROSION CONTROL MEASURES TO INSURE THAT SURFACE WATER RUN-OFF FROM UNSTABILIZED AREAS DOES NOT CARRY SILT, SEDIMENT, AND OTHER DEBRIS OUTSIDE OF THE LIMITS OF WORK.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - C. A MINIMUM OF 3-IN OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;
  - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT AT NO TIME SHALL THE TOTAL UNSTABILIZED DISTURBED AREA ON-SITE BE GREATER THAN (5) FIVE ACRES. [NHDES ALLOWS FOR MORE THAN 5 AC ON CERTAIN SITES IF CERTAIN PROVISIONS ARE PROVIDED]
14. ALL DITCHES, SWALES, AND DRAINAGE BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
15. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL PERMANENT AND TEMPORARY SEEDING SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

| PERMANENT SEEDING       | PROPORTION | GERMINATION MINIMUM | PURITY MINIMUM |
|-------------------------|------------|---------------------|----------------|
| LAWNS:                  |            |                     |                |
| CREeping RED FESCUE     | 50%        | 85%                 | 95%            |
| KENTUCKY BLUEGRASS      | 40%        | 85%                 | 90%            |
| MANHATTAN PERENNIAL RYE | 10%        | 90%                 | 95%            |
| TEMPORARY SEEDING*      | % WEIGHT   | GERMINATION MINIMUM |                |
| WINTER RYE              | 80% MIN.   | 85%                 |                |
| RED FESCUE (CREeping)   | 4% MIN.    | 80%                 |                |
| PERENNIAL RYE GRASS     | 3% MIN.    | 90%                 |                |
| RED CLOVER              | 3% MIN.    | 90%                 |                |
| OTHER CROP GRASS        | 0.5% MAX.  |                     |                |
| NOXIOUS WEED SEED       | 0.5% MAX.  |                     |                |
| INERT MATTER            | 1.0% MAX.  |                     |                |

\* TEMPORARY SEED FOR LAWNS SHALL ONLY BE PLANTED WHEN PERMANENT GRASSES CANNOT BE PLANTED DUE TO THE GROWING SEASON.
18. NO-MOW PLANTING MIX (FOR AREAS INDICATED ON LANDSCAPE PLAN)

THE NO-MOW PLANTING MIX\* SHALL BE THE "NEW ENGLAND CONSERVATION WILDLIFE MIX" AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC.
19. DETENTION BASIN PLANTING MIX (FOR BOTTOM OF DETENTION BASIN)

THE DETENTION BASIN PLANTING MIX SHALL BE THE "NEW ENGLAND EROSION-CONTROL / RESTORATION MIX (FOR DETENTION BASINS AND MOIST SITES) AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC., AMHERST, MA. (413) 256-1752
20. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES THAT ARE STEEPER THAN 3-FT HORIZONTAL AND 1-FT VERTICAL (3:1). EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUAL.
21. THE PROJECT SHALL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.



The Brickyard  
Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Apprv. |
|-----|-----------------------------|----------|--------|
| 1   | Response to Comments Update | 08/06/24 | DF     |

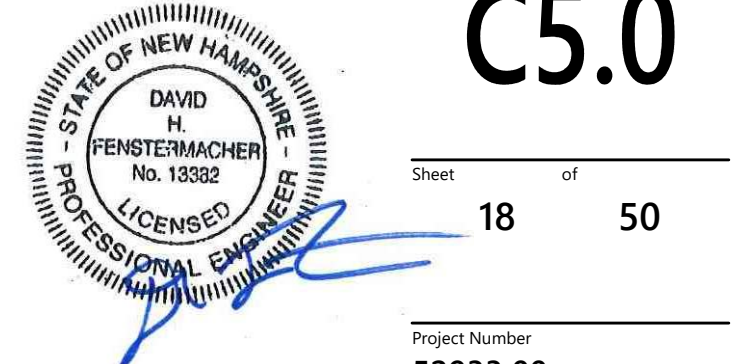
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|-------------|-----|------------|-----|
| Designed by | TMD | Checked by | MJV |
|-------------|-----|------------|-----|

|            |            |      |              |
|------------|------------|------|--------------|
| Issued for | Permitting | Date | May 10, 2024 |
|------------|------------|------|--------------|

Not Approved for Construction

Overall Erosion  
Control Plan

Drawing Number



C5.0

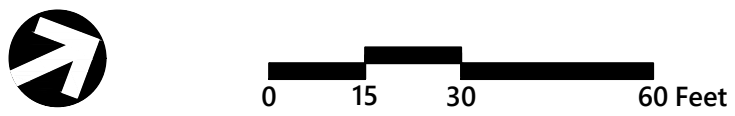
Sheet 18 of 50

Project Number  
52933.00





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appr'd. |
|-----|-----------------------------|----------|---------|
| 1   | Response to Comments Update | 08/06/24 | DF      |

|             |     |            |     |
|-------------|-----|------------|-----|
| Designed by | TMD | Checked by | MJV |
|-------------|-----|------------|-----|

|            |            |      |              |
|------------|------------|------|--------------|
| Issued for | Permitting | Date | May 10, 2024 |
|------------|------------|------|--------------|

Not Approved for Construction

Erosion Control Plan 1

Drawing Number



C5.1

Sheet 19 of 50





**The Brickyard  
Residential Development**

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appr'd. |
|-----|-----------------------------|----------|---------|
| 1   | Response to Comments Update | 08/06/24 | DF      |
|     |                             |          |         |
|     |                             |          |         |
|     |                             |          |         |

|             |     |            |              |
|-------------|-----|------------|--------------|
| Designed by | TMD | Checked by | MJV          |
| Issued for  |     | Date       | May 10, 2024 |

Permitting

Not Approved for Construction

Erosion Control Plan 2

Drawing Number

**C5.2**

Sheet 20 of 50

Project Number  
52933.00

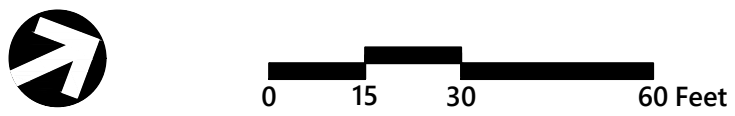
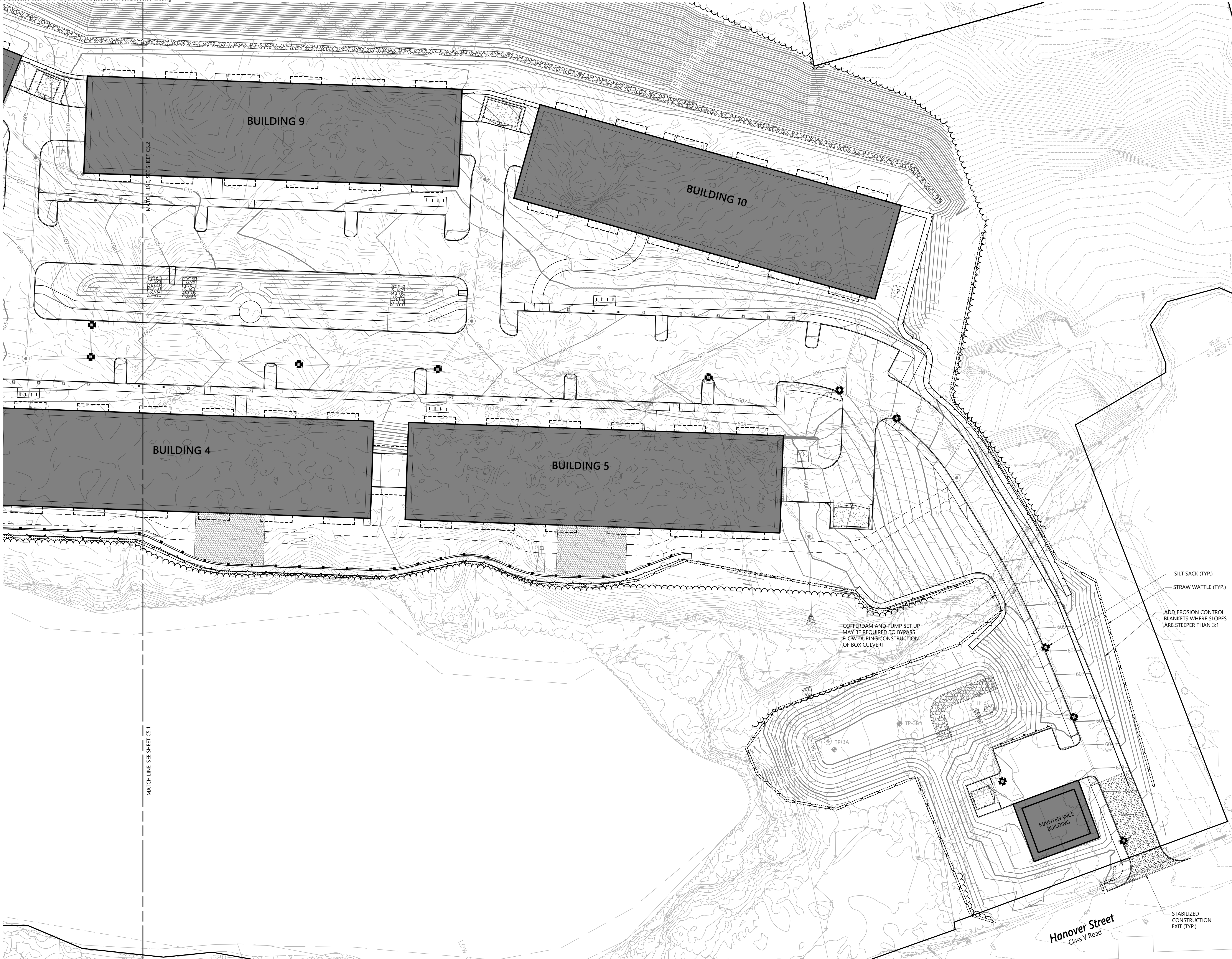
Page 32 of 609







2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



**The Brickyard**  
**Residential Development**

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Apprvd. |
|-----|-----------------------------|----------|---------|
| 1   | Response to Comments Update | 08/06/24 | DF      |
|     |                             |          |         |
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|             |     |            |              |
|-------------|-----|------------|--------------|
| Designed by | TMD | Checked by | MJV          |
| Issued for  |     | Date       | May 10, 2024 |

Permitting

Not Approved for Construction

Erosion Control Plan 3

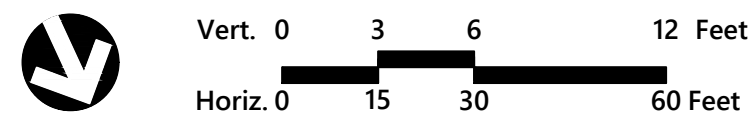
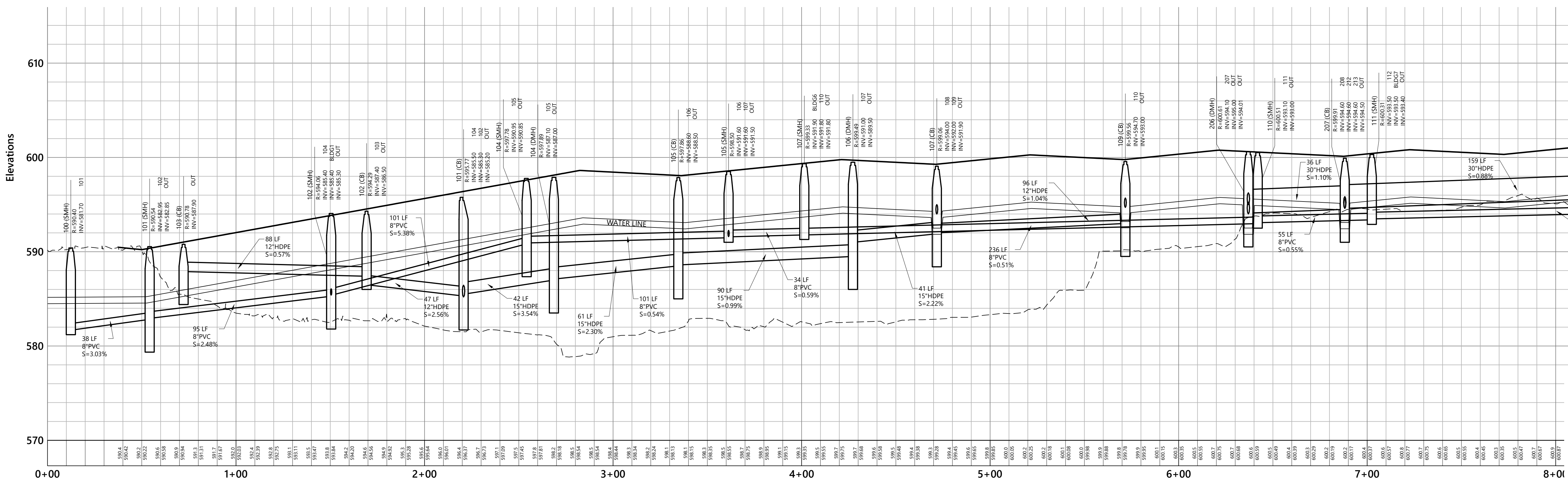
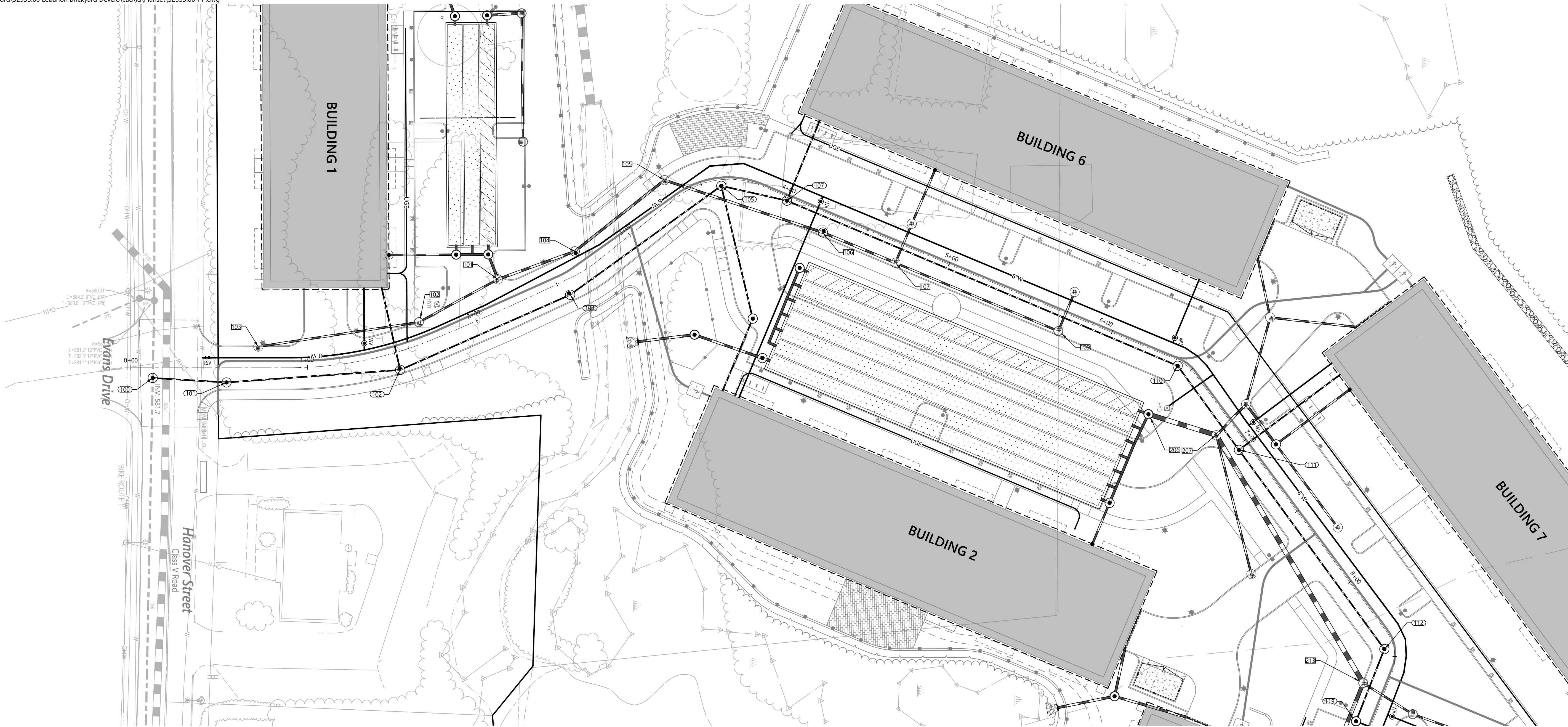


C5.3

Sheet 21 of 50

Project Number  
52933.00





## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

[illegible]

|             |     |            |     |
|-------------|-----|------------|-----|
| Designed by | TMD | Checked by | MJV |
|-------------|-----|------------|-----|

Permitting May 10, 2024

Not Approved for Construction

## Plan and Profile 1

### Sewer, Drainage and Water

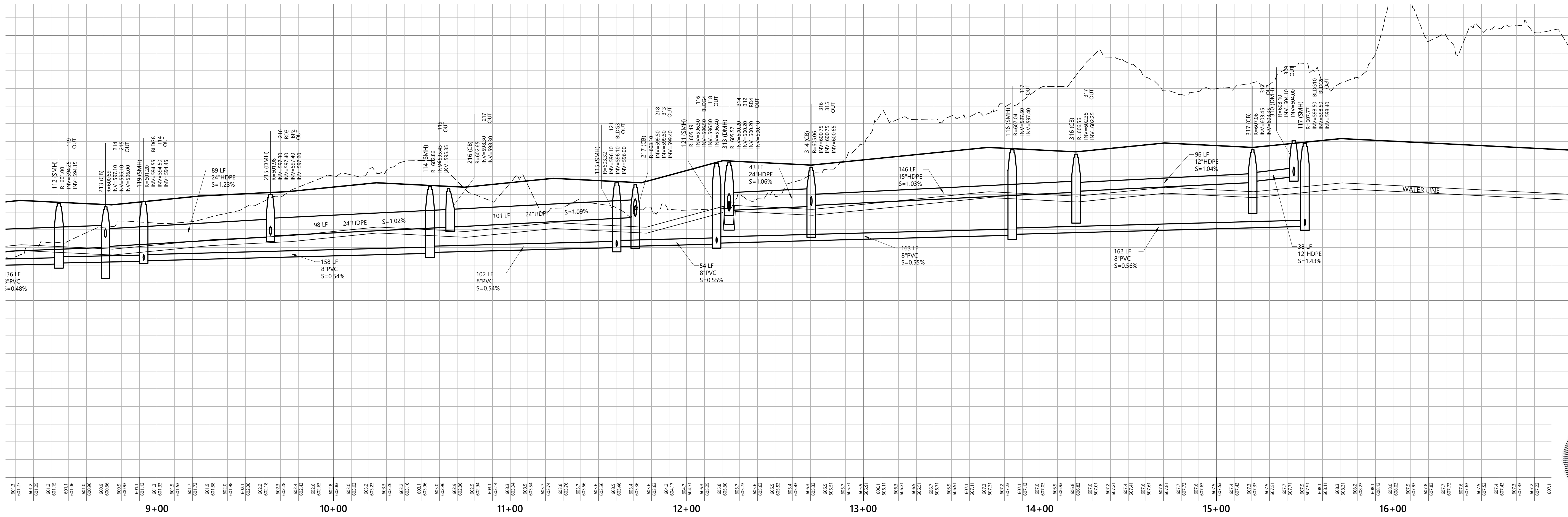
Drawing Number

## C6.1

Sheet 22 of 50

Project Number  
52933.00



[illegible]

Not Approved for Construction

Drawing Title

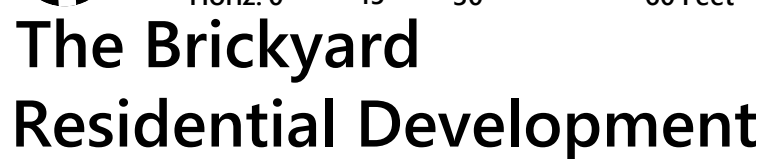
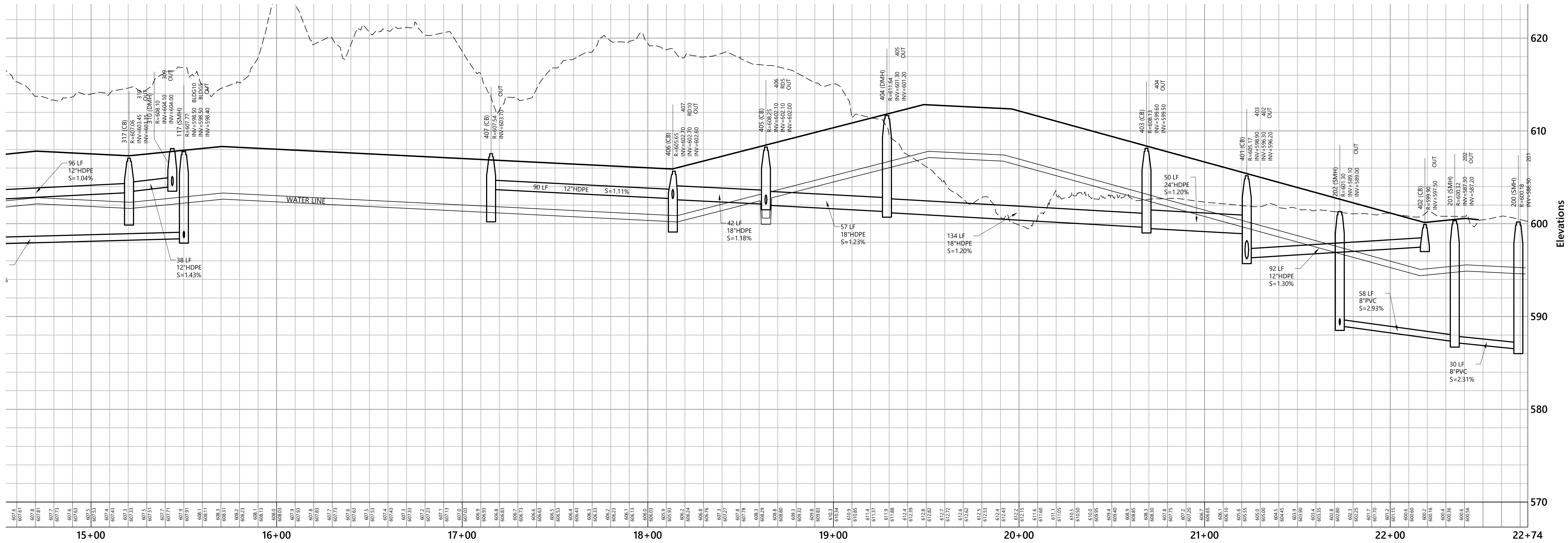
**Plan and Profile 2**

**Sewer, Drainage and Water**

## C6.2

Project Number  
52933.00





| No. | Revision | Date | Appvd. |
|-----|----------|------|--------|
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Not Approved for Construction

Drawing Title

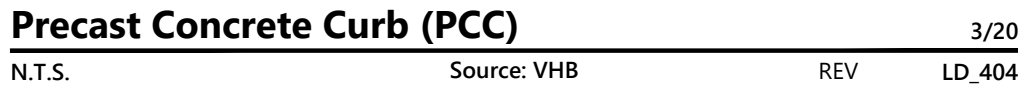
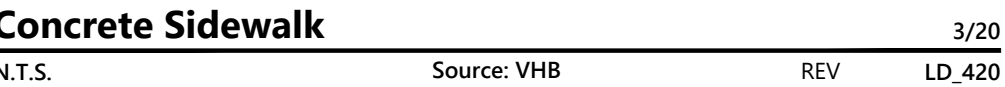
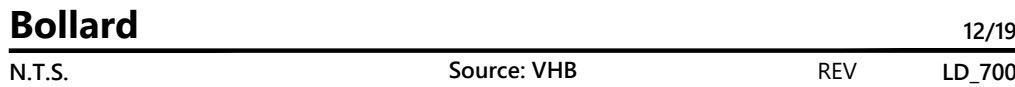
**Plan and Profile 3**

**Sewer, Drainage and Water**

## C6.3

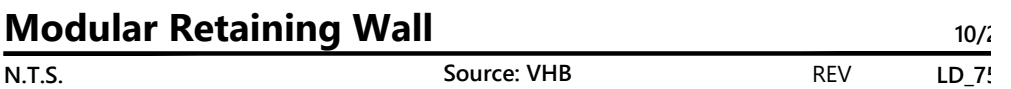
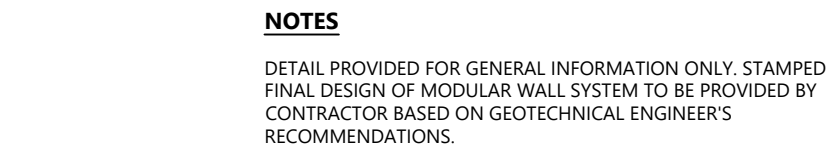
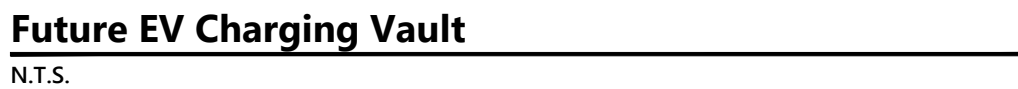
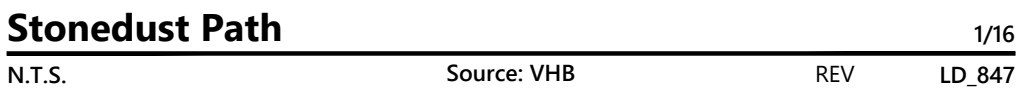
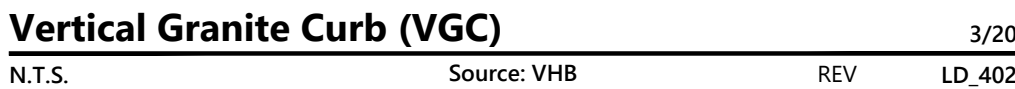
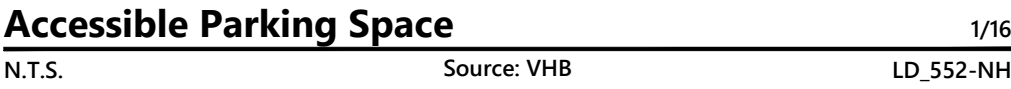
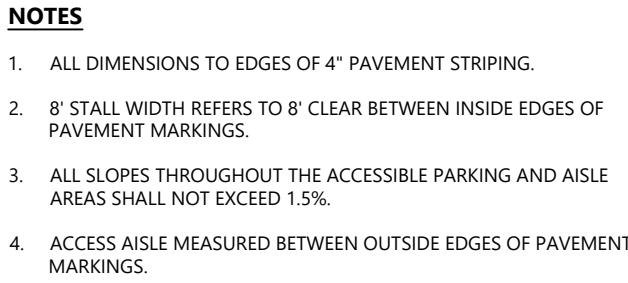
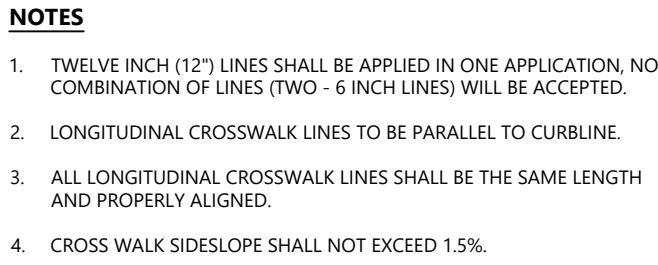
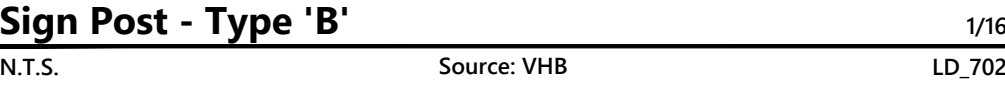
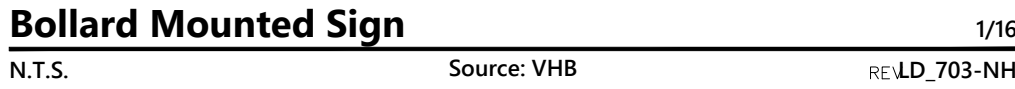
Project Number  
**52933.00**





**NOTES**

PAVEMENT SECTIONS ARE SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.



# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

|                                 |                             |
|---------------------------------|-----------------------------|
| Designed by<br><b>TMD</b>       | Checked by<br><b>MJV</b>    |
| Issued for<br><b>Permitting</b> | Date<br><b>May 10, 2024</b> |

Not Approved for Construction

## Detail Sheet 1

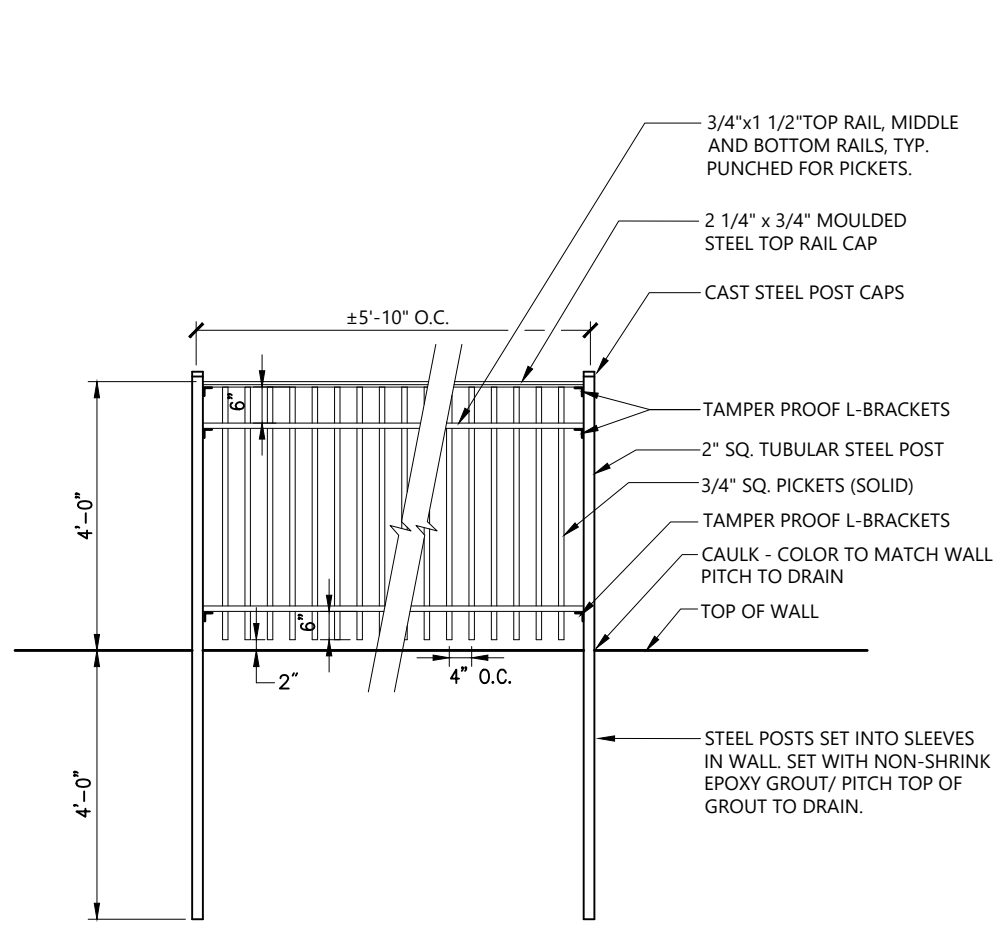
A circular professional engineer seal for the State of New Hampshire. The outer ring contains the text "STATE OF NEW HAMPSHIRE" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by small dashes. The inner circle contains the name "DAVID H. FENSTERMACHER", the license number "No. 13382", and the word "LICENSED" at the bottom. A blue ink signature is written across the bottom of the seal.

# C7.1

Sheet 25 of 50

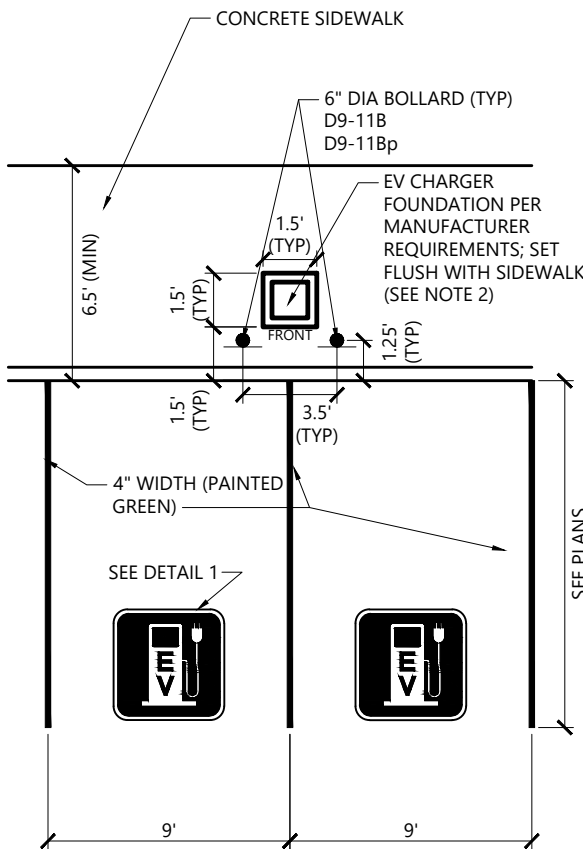
Project Number  
**52933.00**





- NOTES:
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, BASED ON FIELD MEASUREMENTS, FOR APPROVAL PRIOR TO FABRICATION.
  - ALL STEEL SHALL BE HOT DIPPED GALVANIZED WITH FACTORY APPLIED EPOXY ENAMEL FINISH TO MATCH EXISTING FENCE.

**4' Ht. Metal Fence on Wall** 5/23  
N.T.S. Source: VHB LD\_



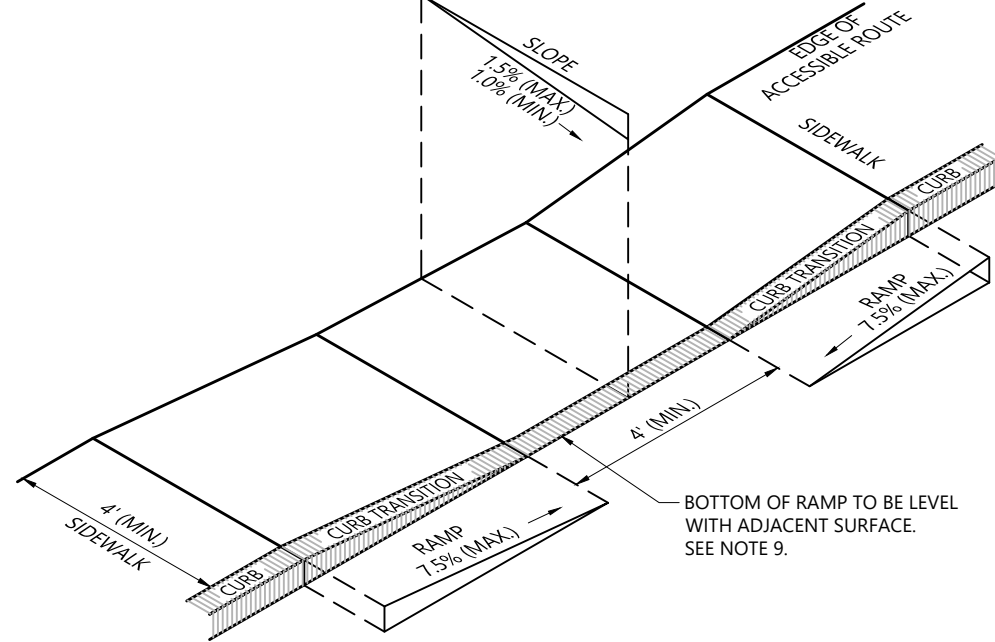
- NOTES
- ALL DIMENSION TO CENTER OF STRIPING.
  - FOR FUTURE EV CHARGING LOCATIONS, CONTRACTOR SHALL INSTALL A 18"W x 18"H x 24"D CONCRETE SECTION WITH EV CHARGING VAULT INSET WITHIN (SEE DETAIL).

**Electric Vehicle Charging Spaces**  
N.T.S. Source: VHB

| Sign Summary      |       | Specification |       |
|-------------------|-------|---------------|-------|
| M.U.T.C.D. Number | Width | Height        | Desc. |
| D9-118            | 12"   | 18"           |       |
| D9-118P           | 12"   | 12"           |       |

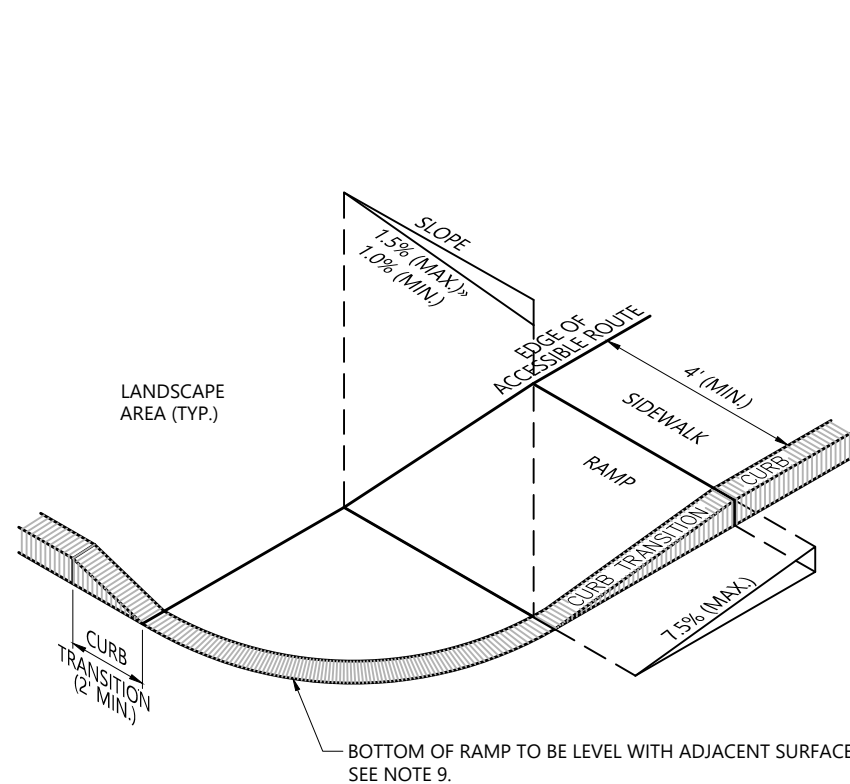
**DETAIL 1**

WHITE SKID-RESISTANT PAINT



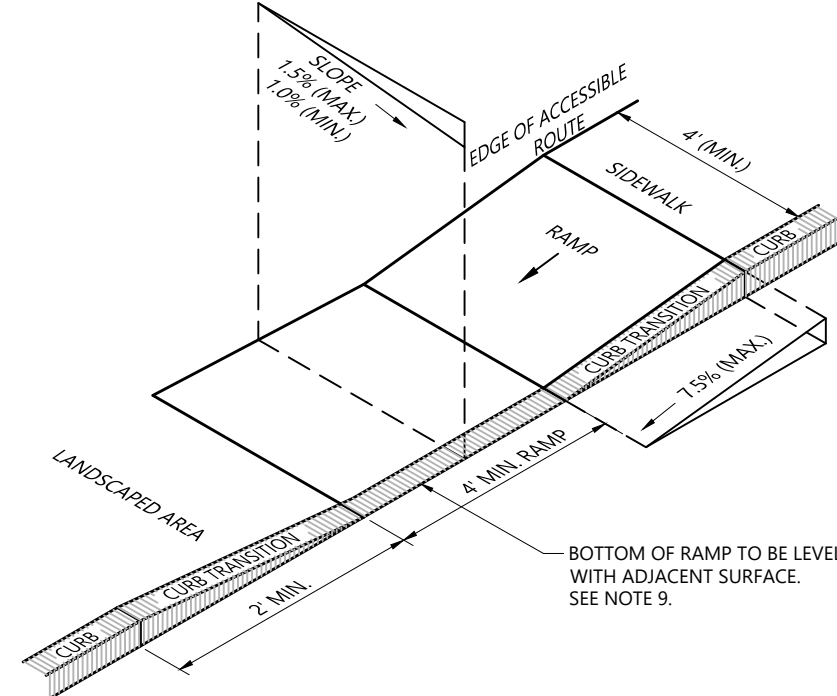
- NOTES
- THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - CURB TREATMENT VARIES. SEE PLANS FOR CURB TYPE.
  - RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
  - SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ELIMINATE CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY.

**Accessible Curb Ramp (ACR) Type 'A'** 12/20  
N.T.S. Source: VHB REV LD\_500



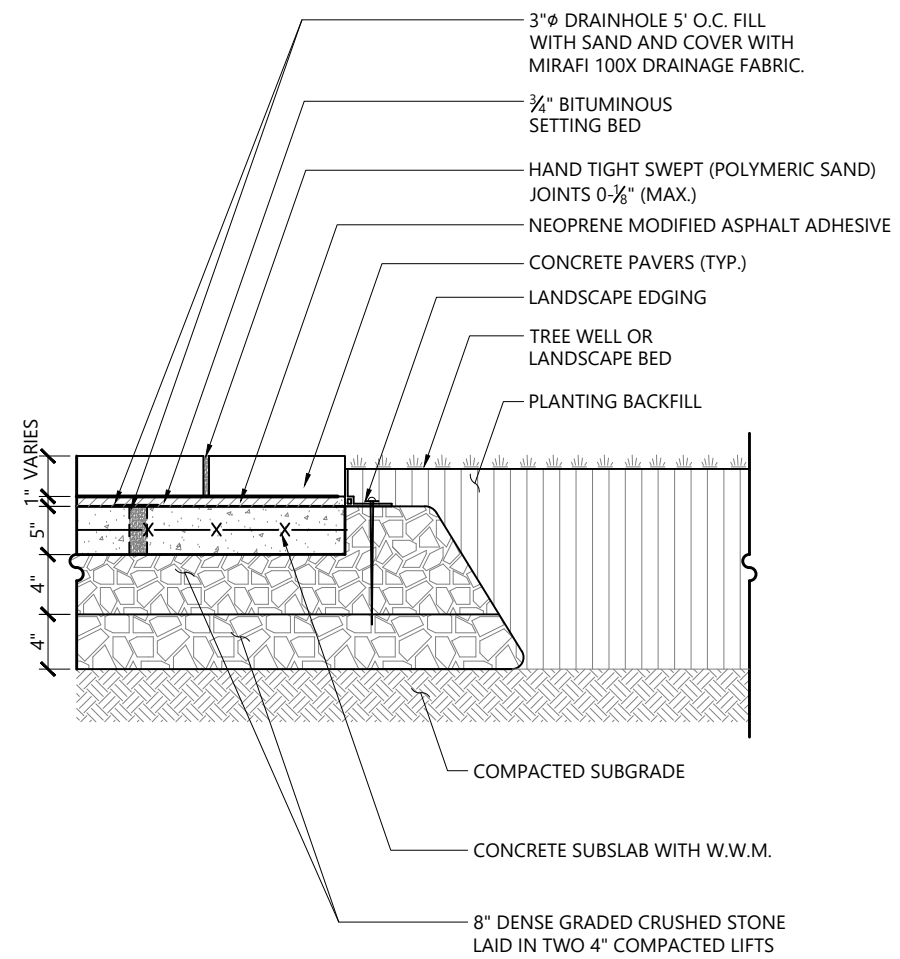
- NOTES
- THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - CURB TREATMENT VARIES. SEE PLANS FOR CURB TYPE.
  - RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
  - SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.

**Accessible Curb Ramp (ACR) - Type 'B'** 12/20  
N.T.S. Source: VHB REV LD\_501

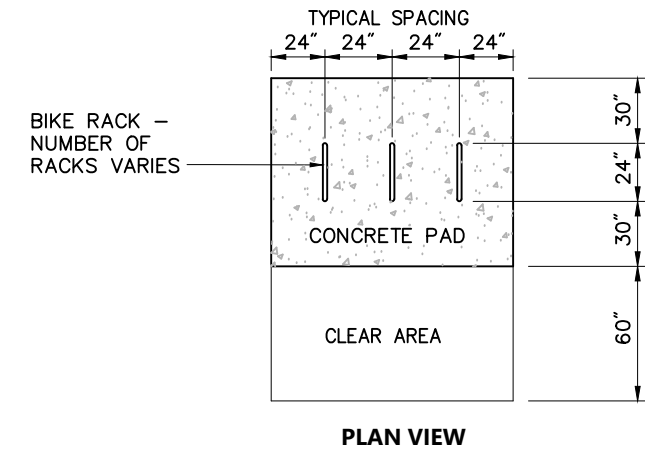


- NOTES
- THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - CURB TREATMENT VARIES. SEE PLANS FOR CURB TYPE.
  - RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
  - SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.

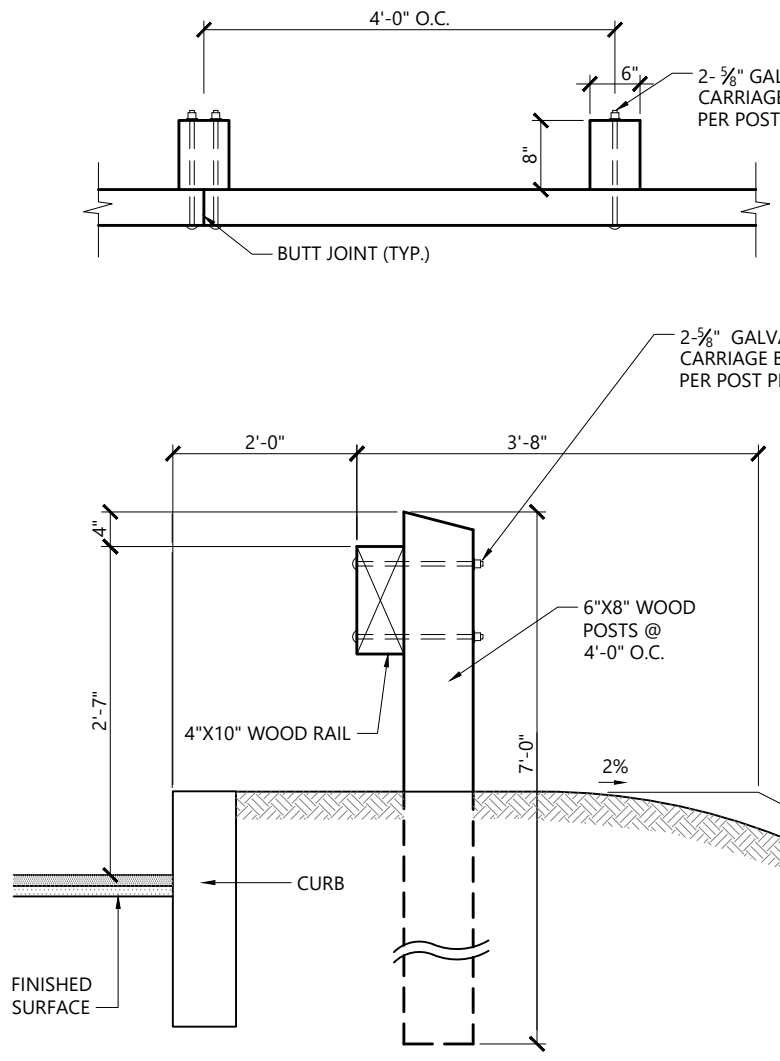
**Accessible Curb Ramp (ACR) Type 'G'** 12/20  
N.T.S. Source: VHB REV LD\_506



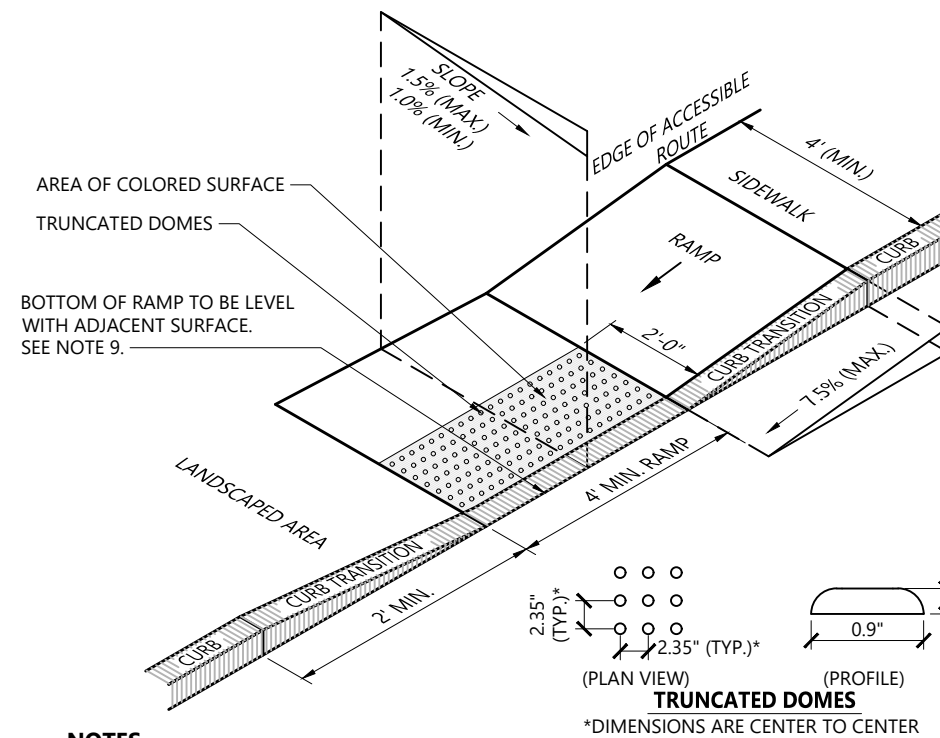
**Unit Paver on Concrete Base at Landscape Edge** 1/16  
N.T.S. Source: VHB REV LD\_830-B



**Bicycle Parking**  
N.T.S. Source: VHB

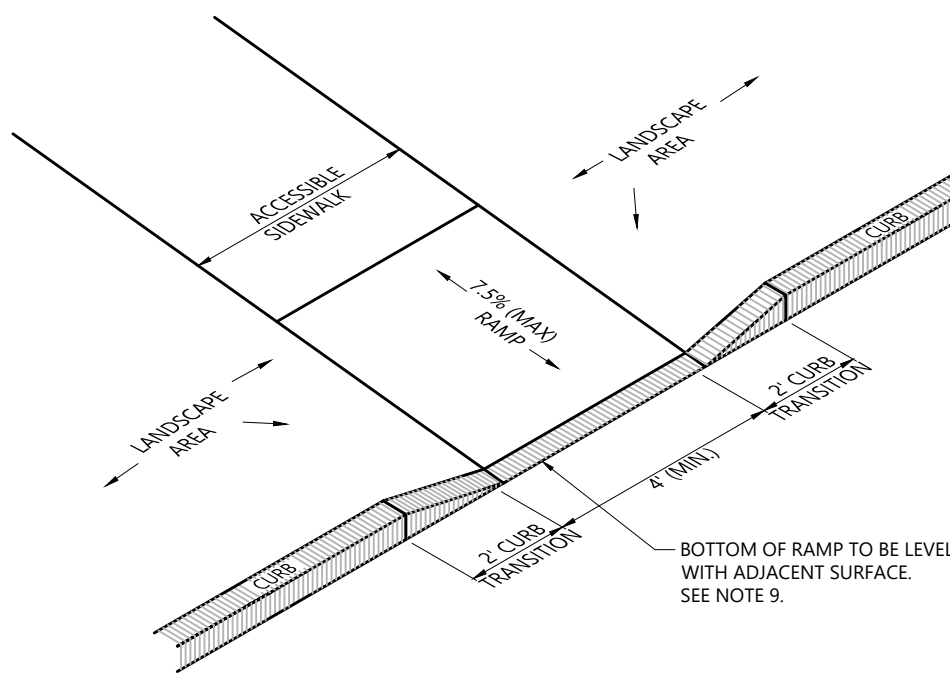


**Wood Guardrail** 10/20  
N.T.S. Source: VHB REV LD\_450



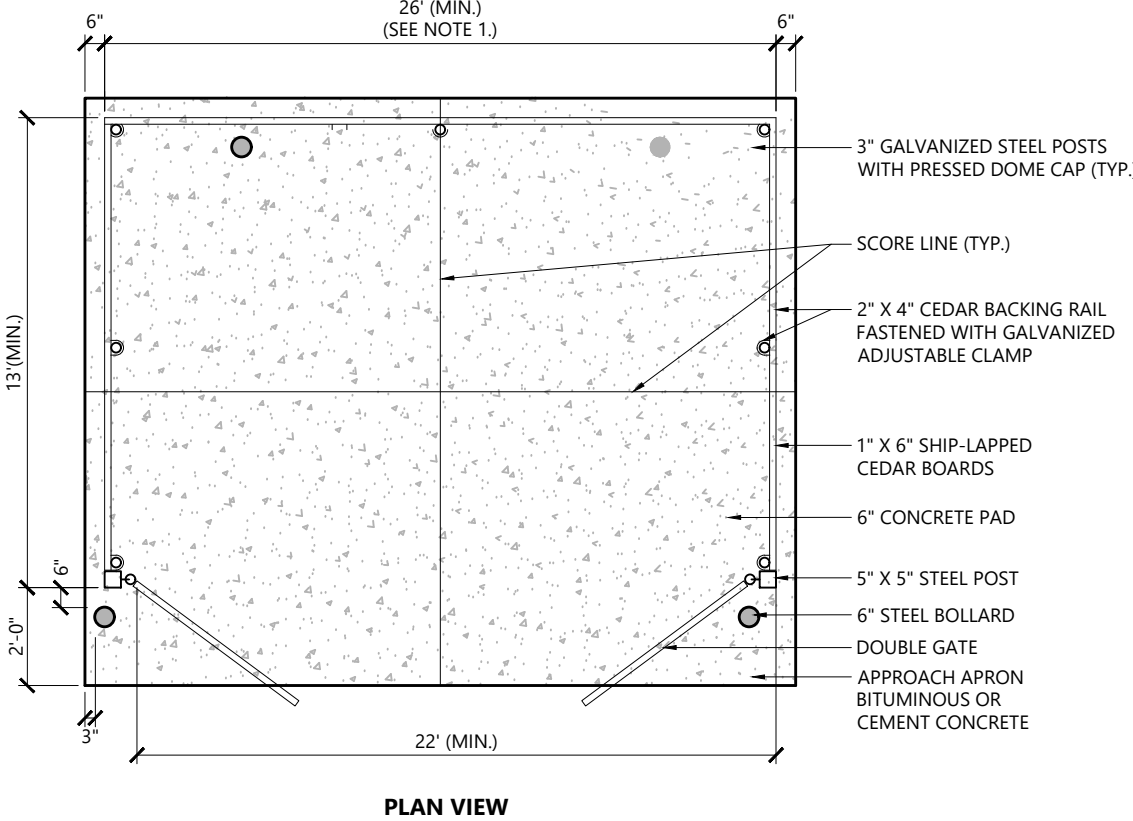
- NOTES
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  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - CURB TREATMENT VARIES. SEE PLANS FOR CURB TYPE.
  - RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
  - SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
  - DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
  - DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.
  - CONTRACTOR TO SUBMIT R.F.I. FOR THIS TYPE OF ACCESSIBLE CURB RAMP FOR APEX ROADWAY CROSSINGS.

**Accessible Curb Ramp (ACR) Type 'G-D'** 12/20  
N.T.S. Source: VHB REV LD\_506



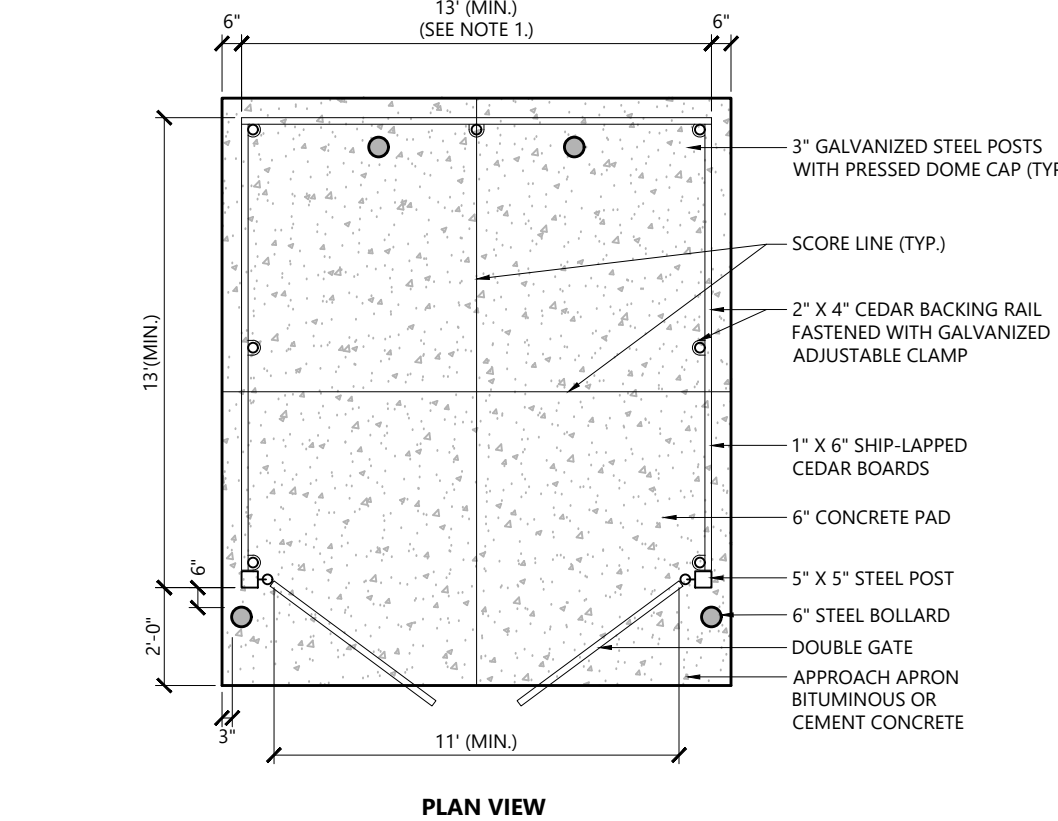
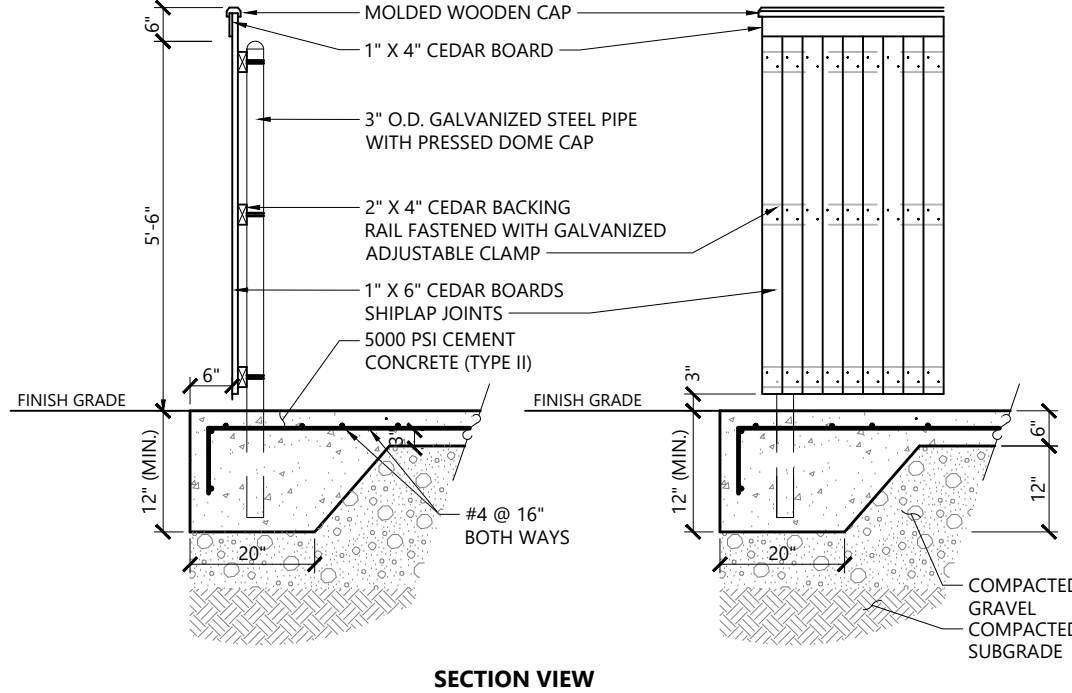
- NOTES
- THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
  - A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
  - CURB TREATMENT VARIES. SEE PLANS FOR CURB TYPE.
  - RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
  - SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAYS.

**Accessible Curb Ramp (ACR) Type 'M'** 12/20  
N.T.S. Source: VHB REV LD\_512



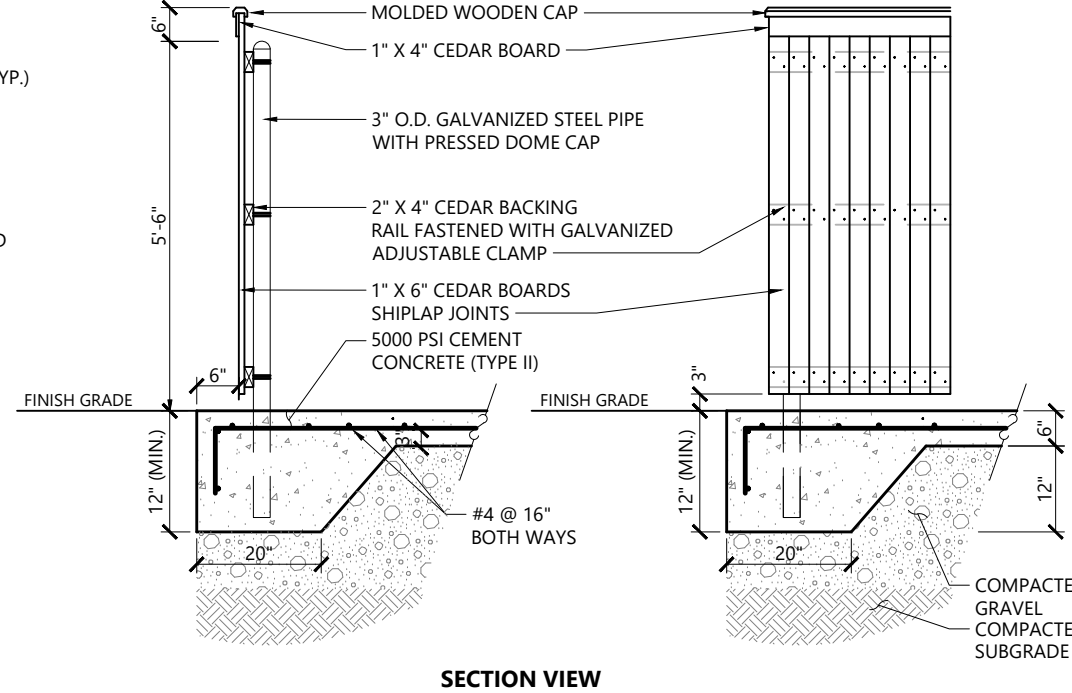
- NOTES
- DUMPSTER PAD DIMENSIONS SHOWN AS MINIMUM. REFER TO PLAN FOR ACTUAL DIMENSION.
  - PAD DESIGNED FOR TWO 6 YARD DUMPSTERS.

**Double Dumpster Pad w/ Enclosure** 1/20  
N.T.S. Source: VHB REV LD\_713



- NOTES
- DUMPSTER PAD DIMENSIONS SHOWN AS MINIMUM. REFER TO PLAN FOR ACTUAL DIMENSION.
  - PAD DESIGNED FOR 6 YARD DUMPSTER.

**Dumpster Pad w/ Enclosure** 1/20  
N.T.S. Source: VHB REV LD\_71



## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appr'd. |
|-----|-----------------------------|----------|---------|
| 1   | Response to Comments Update | 08/06/24 | DF      |

Designed by **MJV** Checked by  
Issued for **Permitting** Date **May 10, 2024**

Not Approved for Construction

Drawing Title  
**Detail Sheet 2**

Drawing Number



**C7.2**

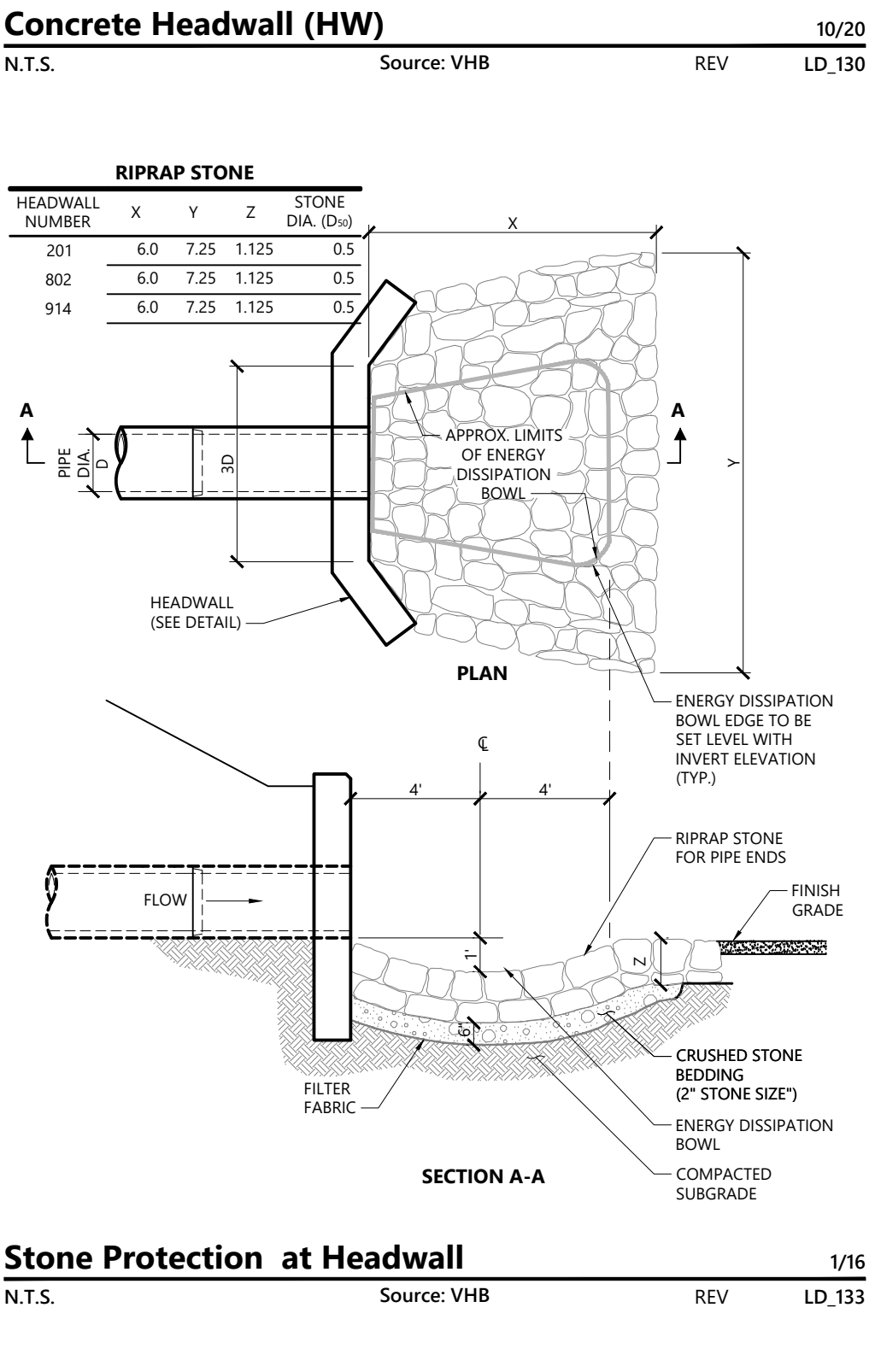
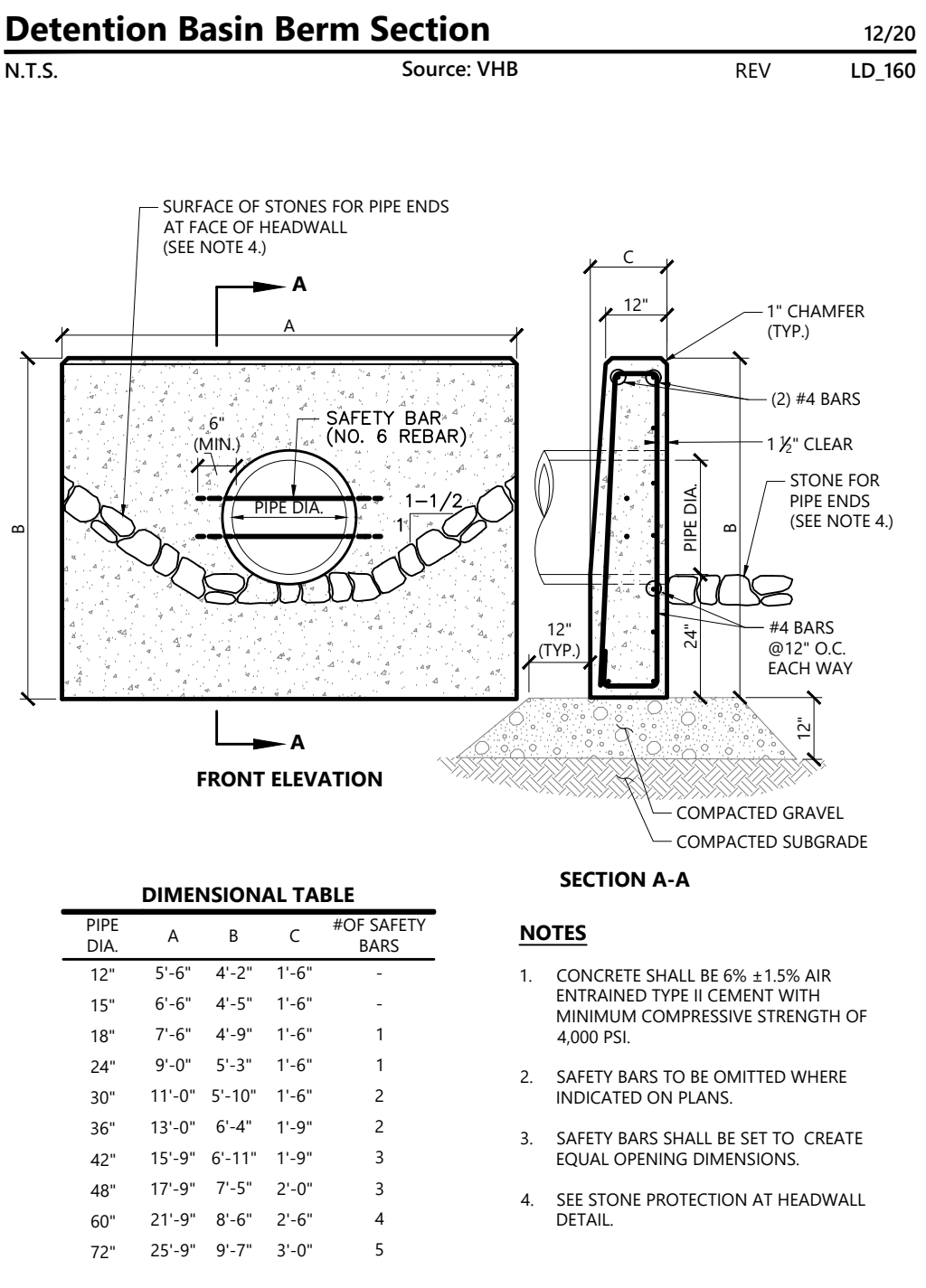
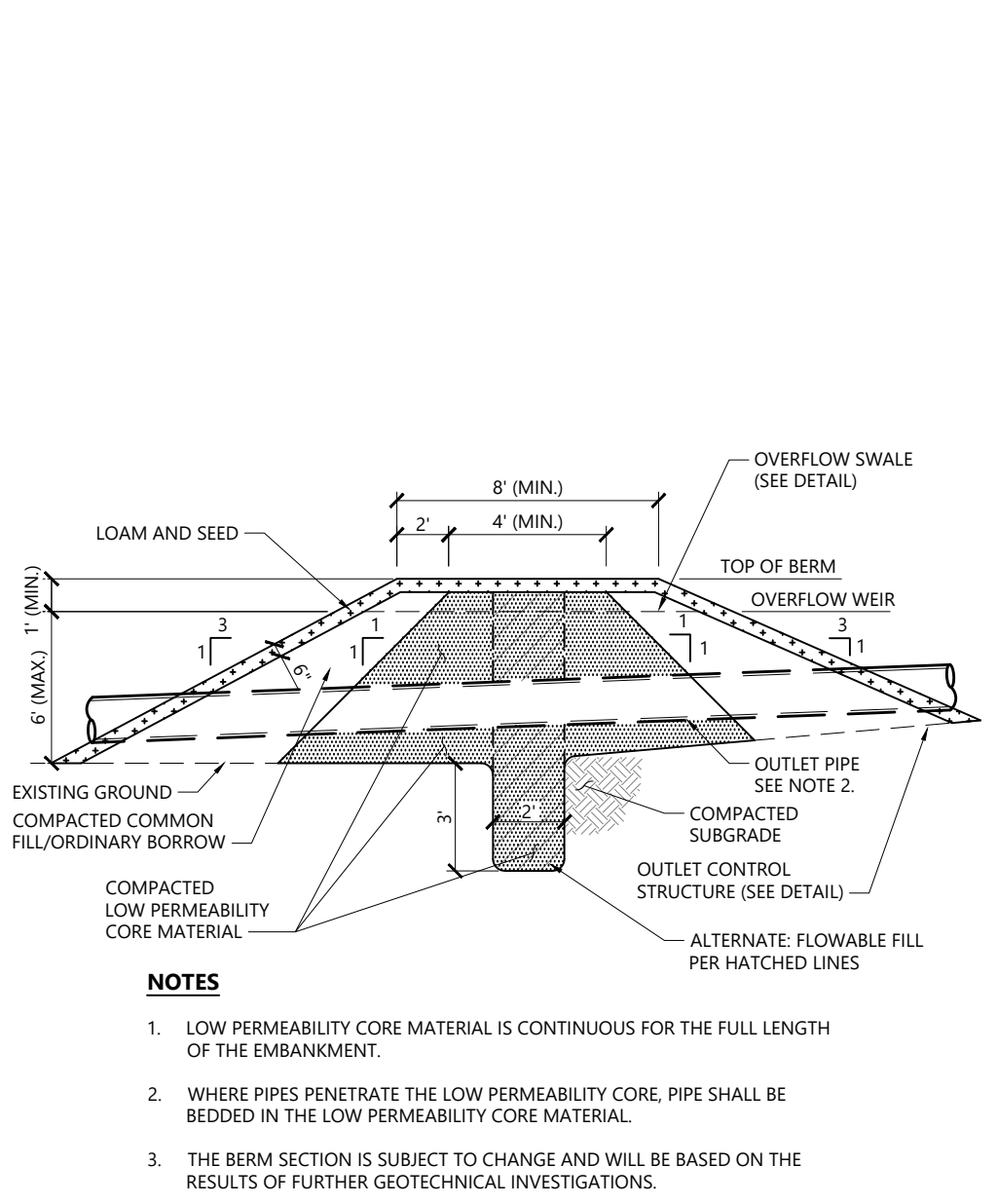
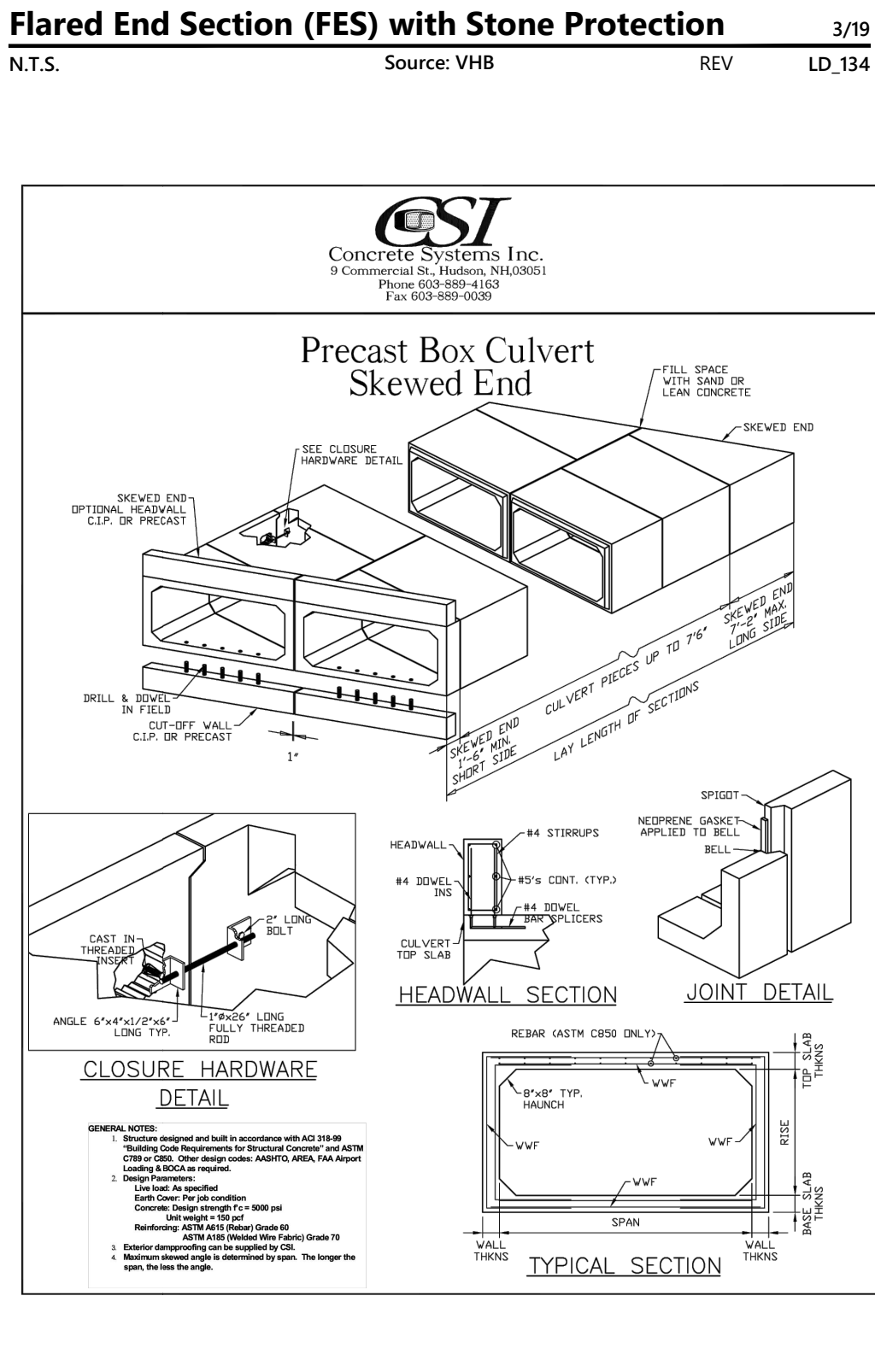
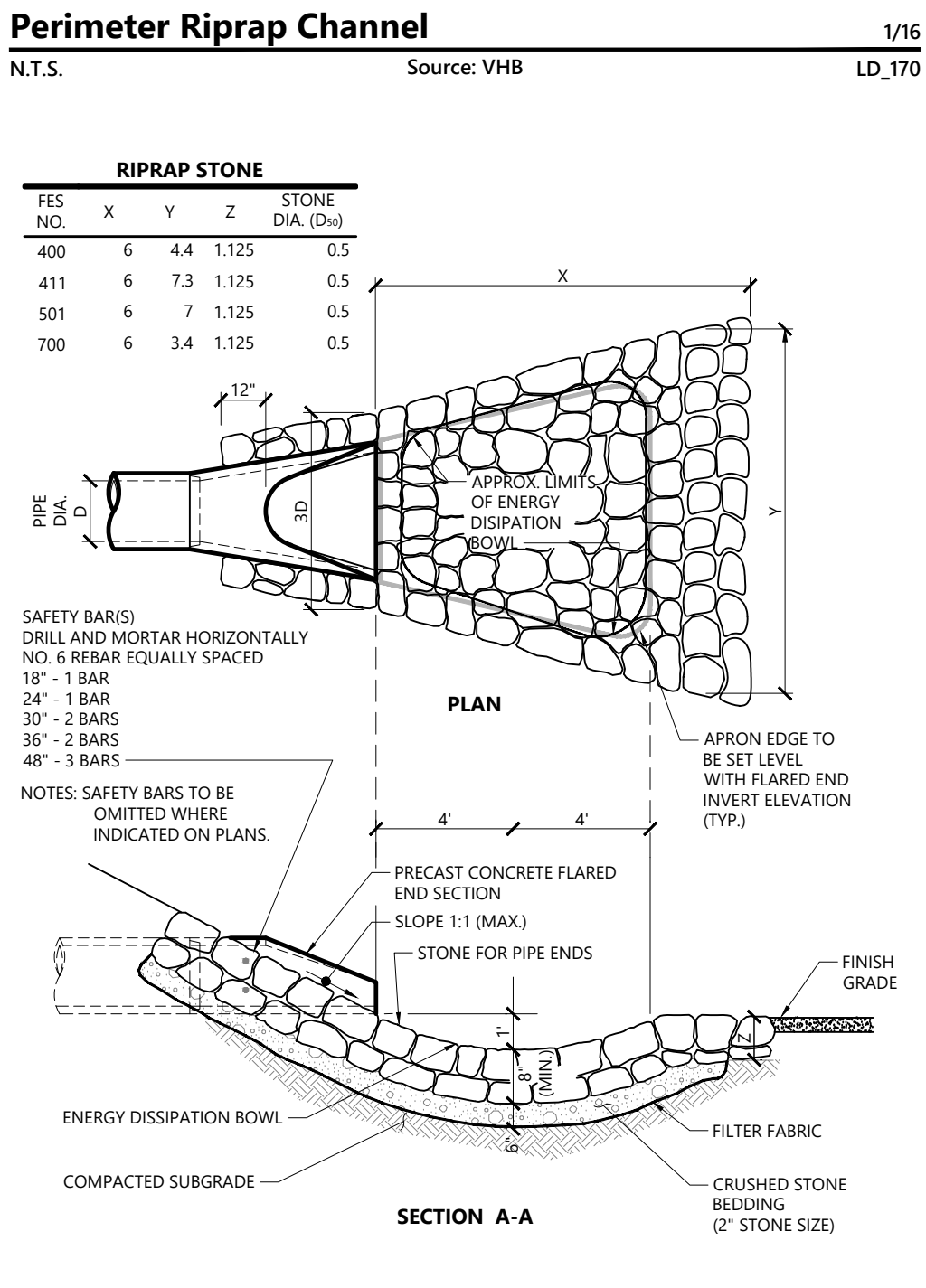
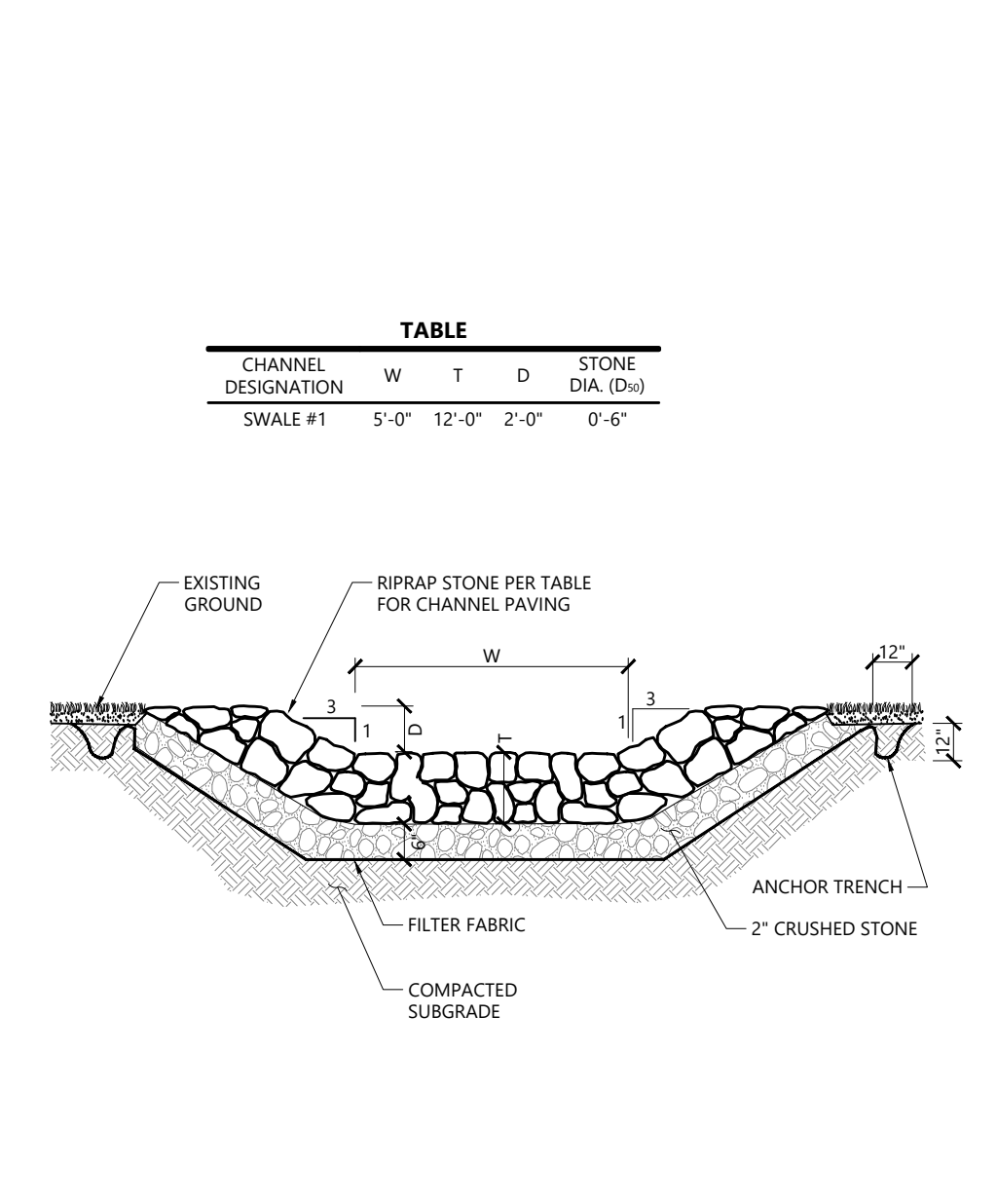
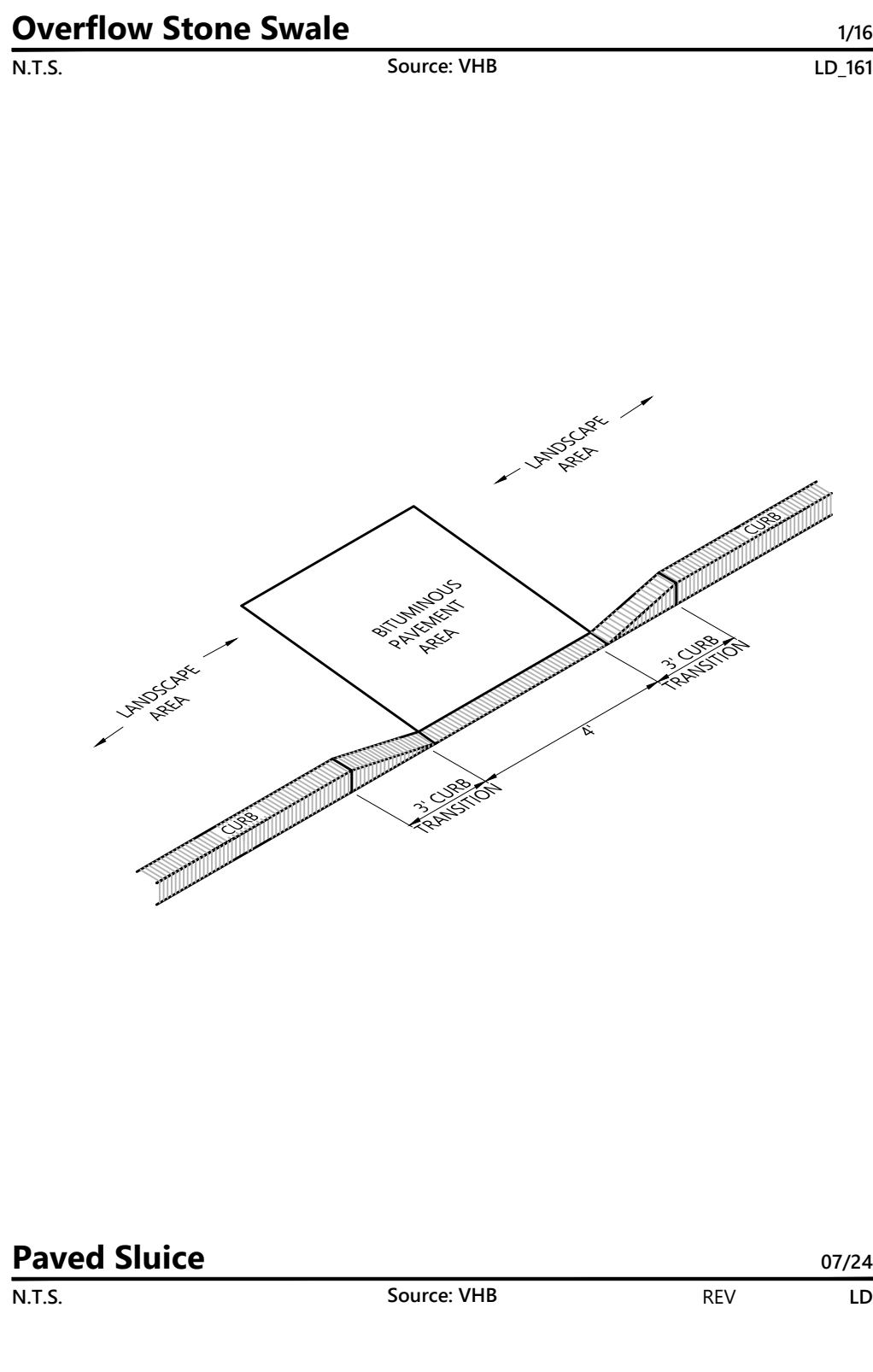
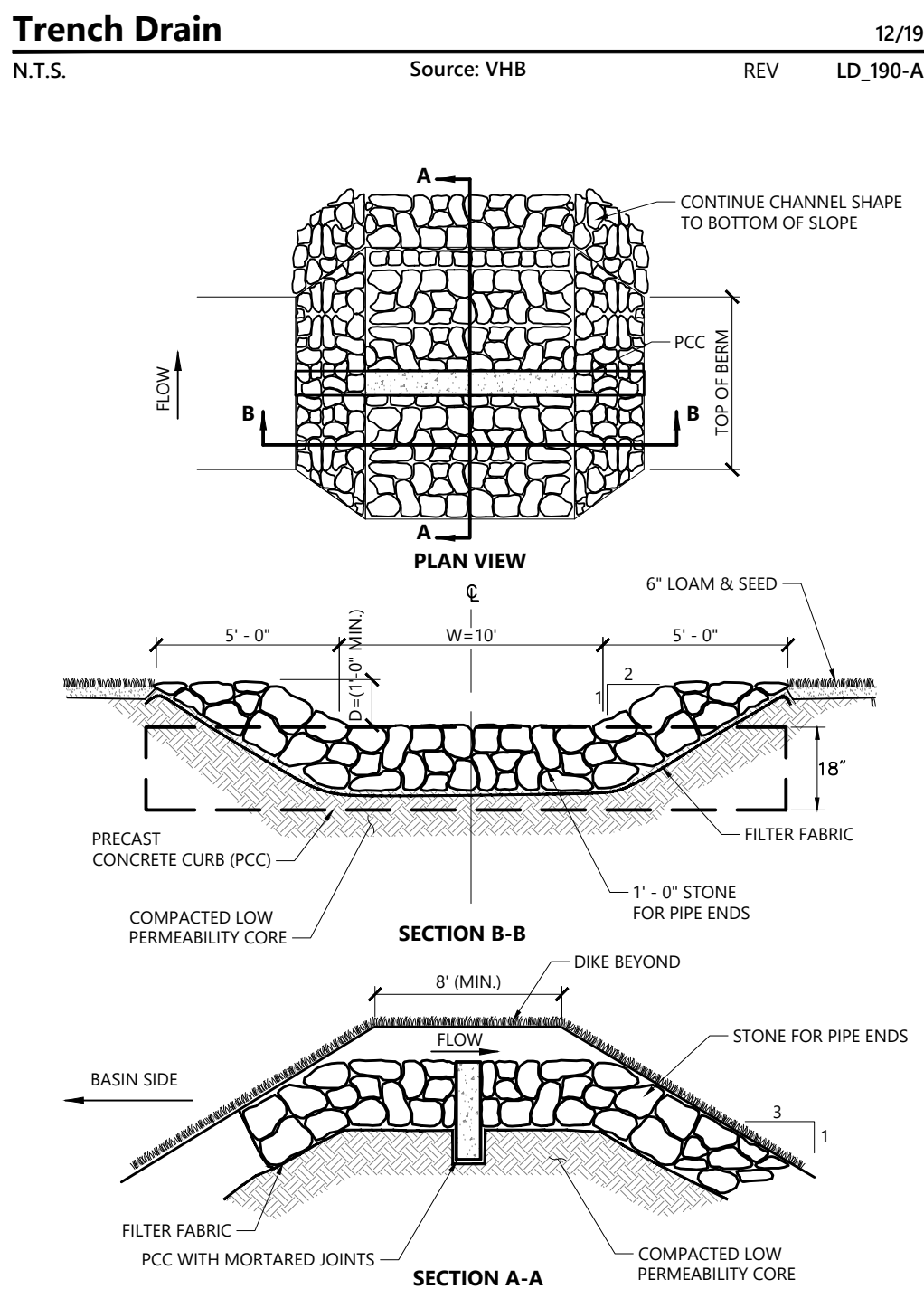
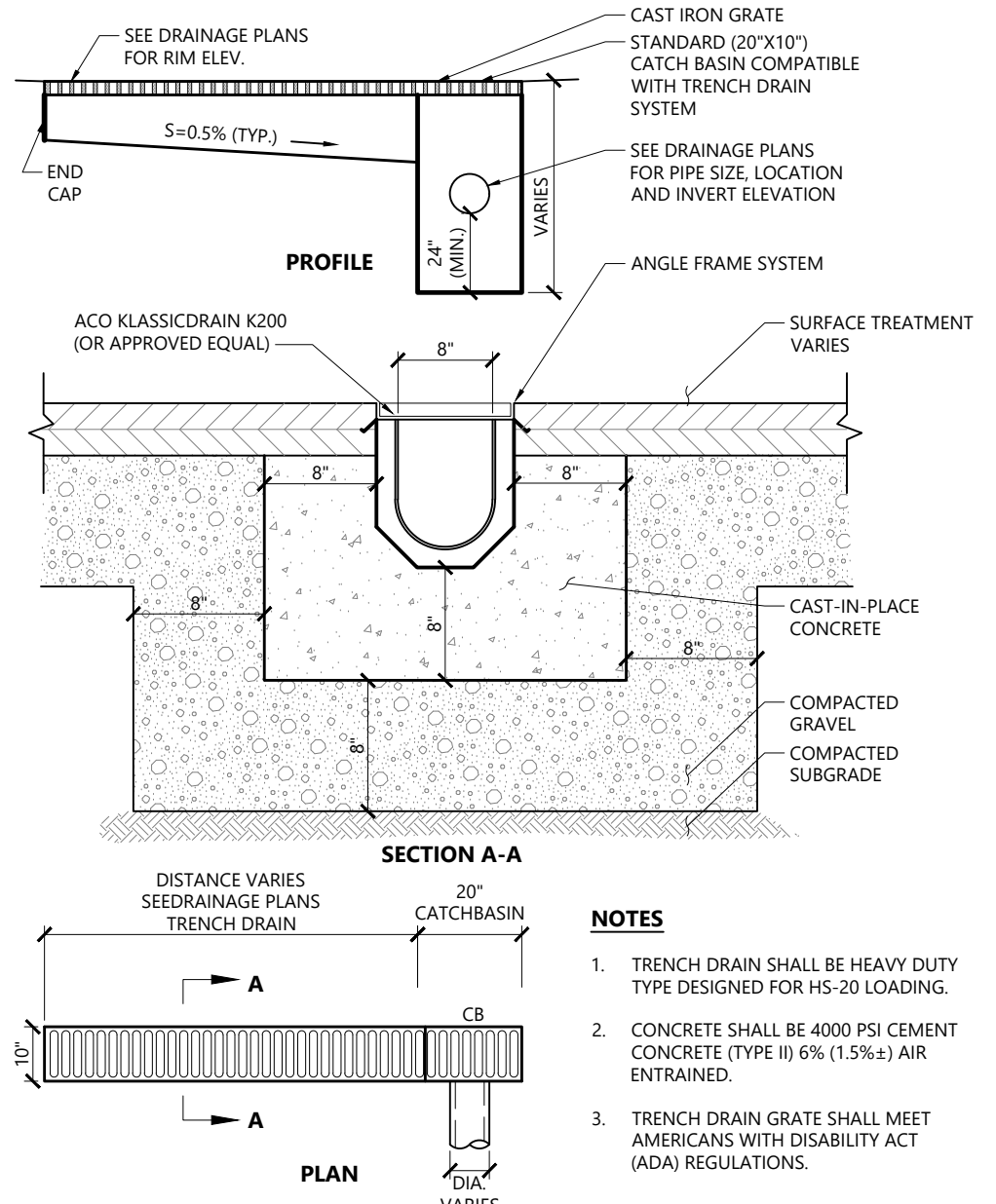
Sheet 26 of 50

Project Number  
**52933.00**



## Storm Sewer Pipe Schedule

| Start Str.  | End Str. | Size | Material | Length | Slope  | Start Inv. | End Inv. |
|-------------|----------|------|----------|--------|--------|------------|----------|
| 101 (3)     | 902 (3)  | 15   | HDPE     | 1.256  | 1.33%  | 48.19      | 48.18    |
| 102 (3)     | 101 (3)  | 12   | HDPE     | 4.244  | 2.36%  | 48.42      | 48.32    |
| 103 (3)     | 102 (3)  | 12   | HDPE     | 7.662  | 0.54%  | 48.53      | 48.49    |
| 104 (3)     | 101 (3)  | 15   | HDPE     | 3.856  | 3.24%  | 48.34      | 48.22    |
| 105 (3)     | 104 (3)  | 15   | HDPE     | 5.412  | 2.16%  | 48.47      | 48.35    |
| 106 (3)     | 105 (3)  | 15   | HDPE     | 7.874  | 0.95%  | 48.55      | 48.48    |
| 107 (3)     | 106 (3)  | 15   | HDPE     | 3.708  | 2.02%  | 48.75      | 48.68    |
| 108 (3)     | 107 (3)  | 12   | HDPE     | 2.000  | 1.25%  | 49.07      | 49.04    |
| 109 (3)     | 107 (3)  | 12   | HDPE     | 8.333  | 1.00%  | 48.96      | 48.88    |
| 110 (3)     | 109 (3)  | 12   | HDPE     | 2.000  | 1.25%  | 49.12      | 49.10    |
| 202 (3)     | 201 (3)  | 15   | HDPE     | 2.686  | 3.10%  | 48.18      | 48.09    |
| 207 (3)     | 206 (3)  | 30   | HDPE     | 3.353  | 0.99%  | 48.40      | 48.36    |
| 208 (3)     | 207 (3)  | 15   | HDPE     | 2.028  | 2.05%  | 49.02      | 48.98    |
| 209 (3)     | 208 (3)  | 12   | HDPE     | 4.243  | 0.95%  | 49.22      | 49.18    |
| 210 (3)     | 208 (3)  | 15   | HDPE     | 2.364  | 0.70%  | 49.04      | 49.03    |
| 211 (3)     | 210 (3)  | 12   | HDPE     | 4.888  | 0.85%  | 49.21      | 49.17    |
| 212 (3)     | 207 (3)  | 12   | HDPE     | 6.755  | 0.86%  | 49.15      | 49.09    |
| 213 (3)     | 207 (3)  | 30   | HDPE     | 13.594 | 0.86%  | 48.52      | 48.40    |
| 214 (3)     | 213 (3)  | 12   | HDPE     | 2.756  | 2.42%  | 49.37      | 49.30    |
| 215 (3)     | 213 (3)  | 24   | HDPE     | 7.787  | 1.18%  | 48.85      | 48.76    |
| 216 (3)     | 215 (3)  | 24   | HDPE     | 8.479  | 0.98%  | 48.94      | 48.86    |
| 217 (3)     | 216 (3)  | 24   | HDPE     | 8.735  | 1.05%  | 49.03      | 48.94    |
| 218 (3)     | 217 (3)  | 15   | HDPE     | 2.000  | 1.04%  | 49.41      | 49.39    |
| 309 (3)     | 310 (3)  | 12   | HDPE     | 8.542  | 2.73%  | 50.12      | 49.88    |
| 310 (3)     | 317 (3)  | 12   | HDPE     | 3.540  | 1.29%  | 49.88      | 49.83    |
| 312 (3)     | 313 (3)  | 12   | HDPE     | 12.062 | 2.56%  | 49.87      | 49.56    |
| 313 (3)     | 217 (3)  | 24   | HDPE     | 4.786  | 1.04%  | 49.09      | 49.04    |
| 314 (3)     | 313 (3)  | 24   | HDPE     | 3.884  | 0.97%  | 49.14      | 49.10    |
| 315 (3)     | 314 (3)  | 12   | HDPE     | 2.000  | 1.04%  | 49.62      | 49.60    |
| 316 (3)     | 314 (3)  | 15   | HDPE     | 12.500 | 1.00%  | 49.61      | 49.49    |
| 317 (3)     | 316 (3)  | 12   | HDPE     | 8.333  | 1.00%  | 49.82      | 49.74    |
| 401 (3)     | 400 (3)  | 24   | HDPE     | 4.741  | 1.76%  | 48.77      | 48.68    |
| 402 (3)     | 401 (3)  | 12   | HDPE     | 7.998  | 1.25%  | 49.33      | 49.23    |
| 403 (3)     | 401 (3)  | 24   | HDPE     | 4.500  | 1.11%  | 49.04      | 48.99    |
| 404 (3)     | 403 (3)  | 18   | HDPE     | 11.486 | 1.16%  | 49.41      | 49.28    |
| 405 (3)     | 404 (3)  | 18   | HDPE     | 5.073  | 1.15%  | 49.48      | 49.42    |
| 406 (3)     | 405 (3)  | 18   | HDPE     | 3.856  | 1.08%  | 49.53      | 49.49    |
| 407 (3)     | 406 (3)  | 12   | HDPE     | 7.840  | 1.06%  | 49.85      | 49.77    |
| 500 (3)     | 501 (3)  | 12   | HDPE     | 4.754  | 3.51%  | 48.62      | 48.46    |
| 601 (3)     | 602 (3)  | 15   | HDPE     | 6.129  | 0.41%  | 49.34      | 49.32    |
| 701 (3)     | 700 (3)  | 12   | HDPE     | 4.078  | 10.00% | 49.10      | 48.69    |
| 908 (3)     | 915 (3)  | 15   | HDPE     | 1.637  | 0.68%  | 48.49      | 48.48    |
| 909 (2)     | 908 (3)  | 12   | HDPE     | 6.058  | 1.27%  | 48.69      | 48.62    |
| 913 (3)     | 914 (3)  | 15   | HDPE     | 3.004  | 4.16%  | 48.14      | 48.01    |
| BP2 (3)     | 215 (3)  | 12   | HDPE     | 4.281  | 0.97%  | 49.37      | 49.32    |
| BP3 (3)     | 315 (3)  | 12   | HDPE     | 2.124  | 8.83%  | 49.83      | 49.65    |
| OCS 203 (3) | 202 (3)  | 15   | HDPE     | 3.389  | 3.44%  | 48.30      | 48.19    |
| OCS 410 (3) | 411 (3)  | 15   | HDPE     | 2.885  | 7.93%  | 48.57      | 48.34    |
| RD1 (3)     | 901 (3)  | 12   | HDPE     | 3.172  | 1.05%  | 48.66      | 48.62    |
| RD2 (3)     | 204 (3)  | 12   | HDPE     | 2.099  | 3.57%  | 49.12      | 49.05    |
| RD3 (3)     | 215 (3)  | 12   | HDPE     | 3.108  | 1.07%  | 49.36      | 49.32    |
| RD4 (3)     | 313 (3)  | 12   | HDPE     | 2.945  | 5.09%  | 49.71      | 49.56    |
| RD5 (3)     | 405 (3)  | 12   | HDPE     | 6.801  | 1.10%  | 49.79      | 49.72    |
| RD6 (3)     | 108 (3)  | 12   | HDPE     | 2.750  | 1.52%  | 49.12      | 49.08    |
| RD7 (3)     | 210 (3)  | 12   | HDPE     | 4.329  | 1.15%  | 49.21      | 49.16    |
| RD8 (3)     | 214 (3)  | 12   | HDPE     | 8.913  | 2.34%  | 49.67      | 49.46    |
| RD9 (3)     | 312 (3)  | 12   | HDPE     | 2.927  | 8.54%  | 50.12      | 49.88    |
| RD10 (3)    | 406 (3)  | 12   | HDPE     | 5.826  | 2.57%  | 49.92      | 49.77    |
| TD (3)      | 309 (3)  | 12   | HDPE     | 2.058  | 1.01%  | 50.15      | 50.12    |
| TD (3)      | 209 (3)  | 12   | HDPE     | 4.074  | 1.57%  | 49.29      | 49.23    |
| TD (3)      | 500 (3)  | 12   | HDPE     | 2.646  | 1.26%  | 49.00      | 48.97    |
| TD (3)      | 209 (3)  | 12   | HDPE     | 2.809  | 2.28%  | 49.29      | 49.23    |
| TD (3)      | 312 (3)  | 12   | HDPE     | 3.302  | 1.01%  | 49.91      | 49.88    |



## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appr. |
|-----|-----------------------------|----------|-------|
| 1   | Response to Comments Update | 08/06/24 | DF    |

Designed by TMD Checked by MJV  
Issued for Permitting Date May 10, 2024

Not Approved for Construction

Drawing Title  
**Detail Sheet 3**

Drawing Number

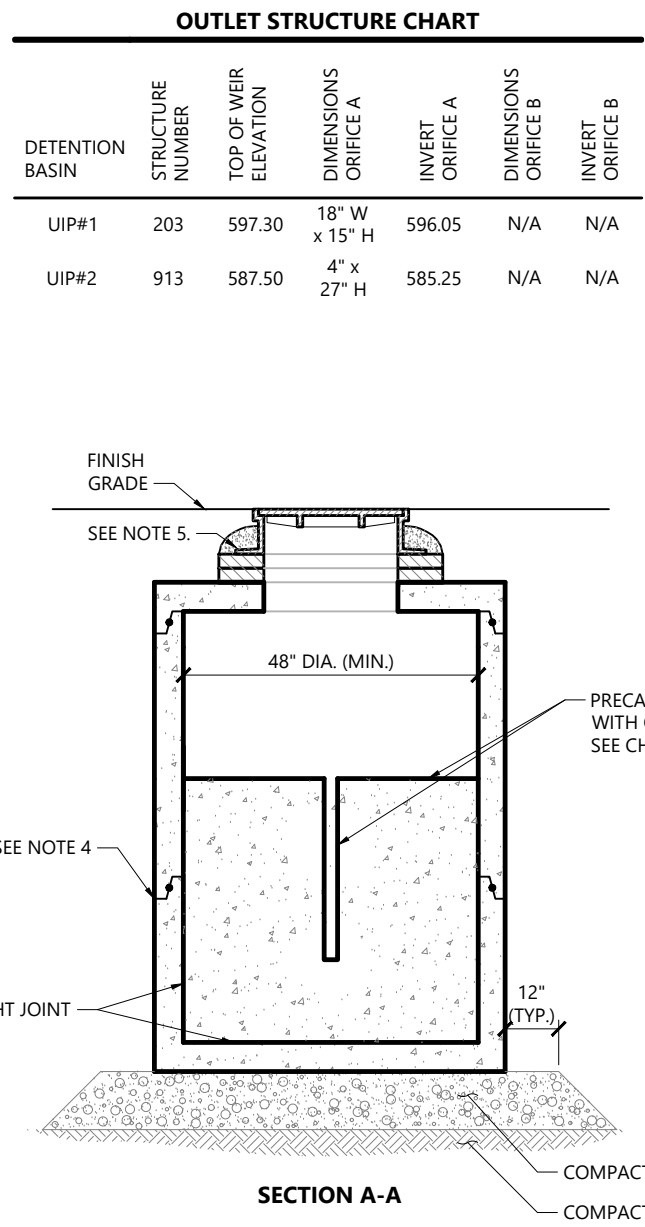
C7.3

Sheet 27 of 50





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



Outlet Control Structure with Weir (OCS)

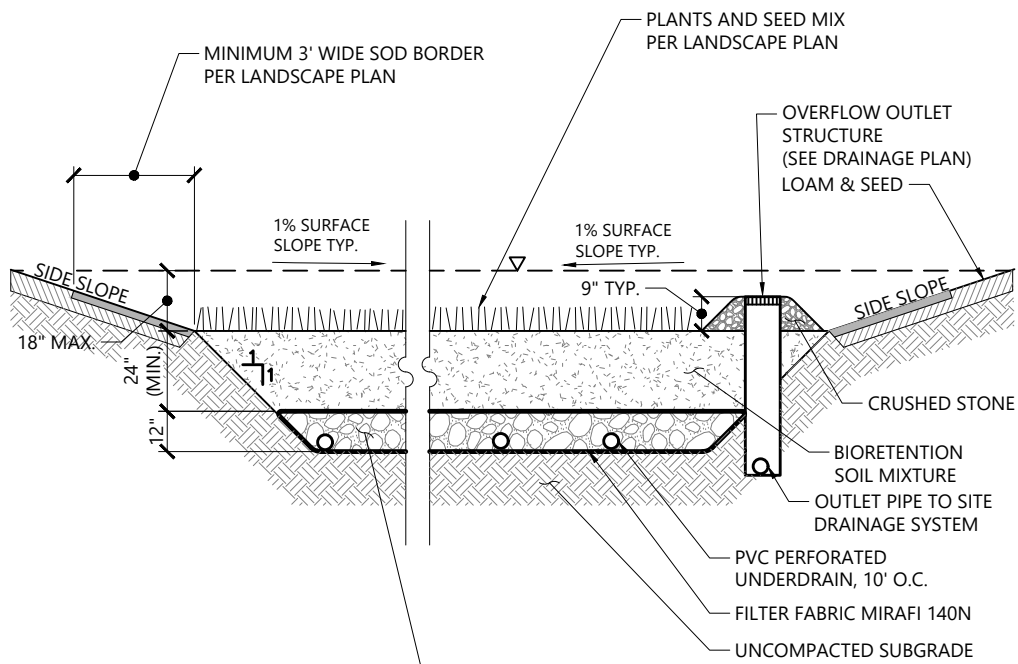
|        |             |     |         |
|--------|-------------|-----|---------|
| N.T.S. | Source: VHB | REV | LD_162A |
|--------|-------------|-----|---------|

NOTES

- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING. DIAMETER OF STRUCTURES SHALL BE COORDINATED WITH PIPE CONFIGURATIONS.
- COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
- FOR HDPE, PVC, AND DI PIPE, PROVIDE FLEXIBLE BOOT CONNECTION INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FOR RCP, PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE AND MORTAR CONNECTIONS.
- JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
- DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

OUTLET STRUCTURE CHART

| DETENTION BASIN | TOP OF WEIR ELEVATION | OVERFLOW DIAMETER | OUTLET PIPE INV. |
|-----------------|-----------------------|-------------------|------------------|
| BP#2            | 603.50                | 12"               | 597.90           |
| BP#3            | 607.00                | 18"               | 603.50           |

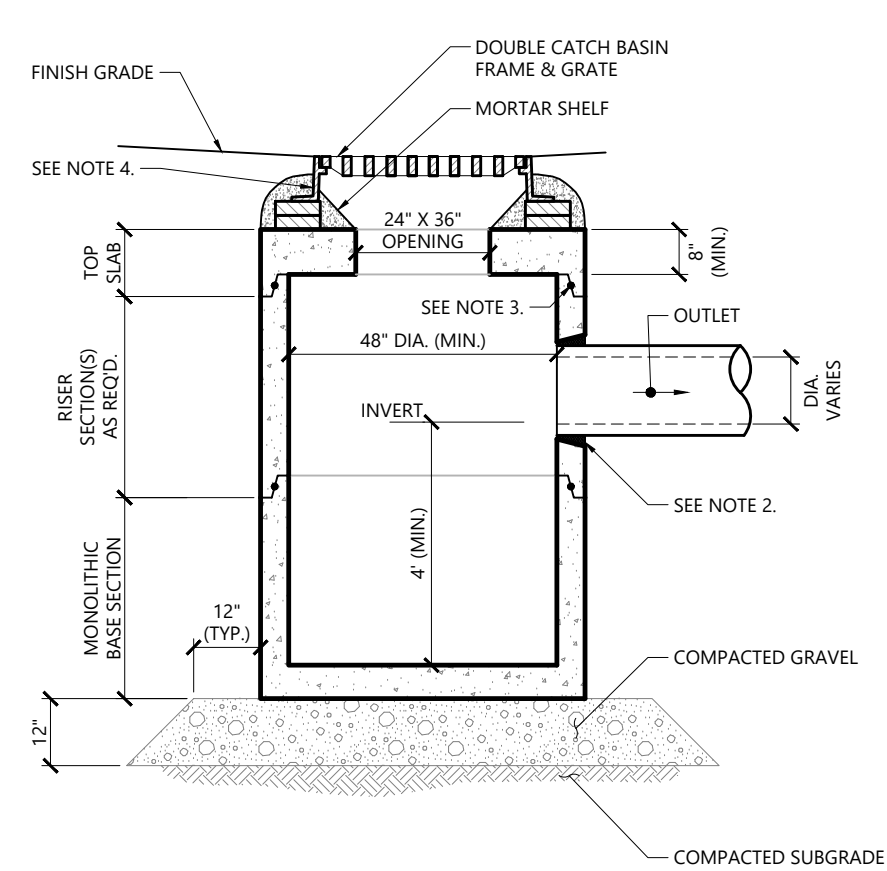


NOTES

- INSTALL UNDERDRAINS AT 10 FEET ON CENTER. CONNECT TO DRAINS PER PLAN.
- SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.

Bioretention Basin #1 OCS Detail

|        |             |     |        |
|--------|-------------|-----|--------|
| N.T.S. | Source: VHB | REV | LD_163 |
|--------|-------------|-----|--------|

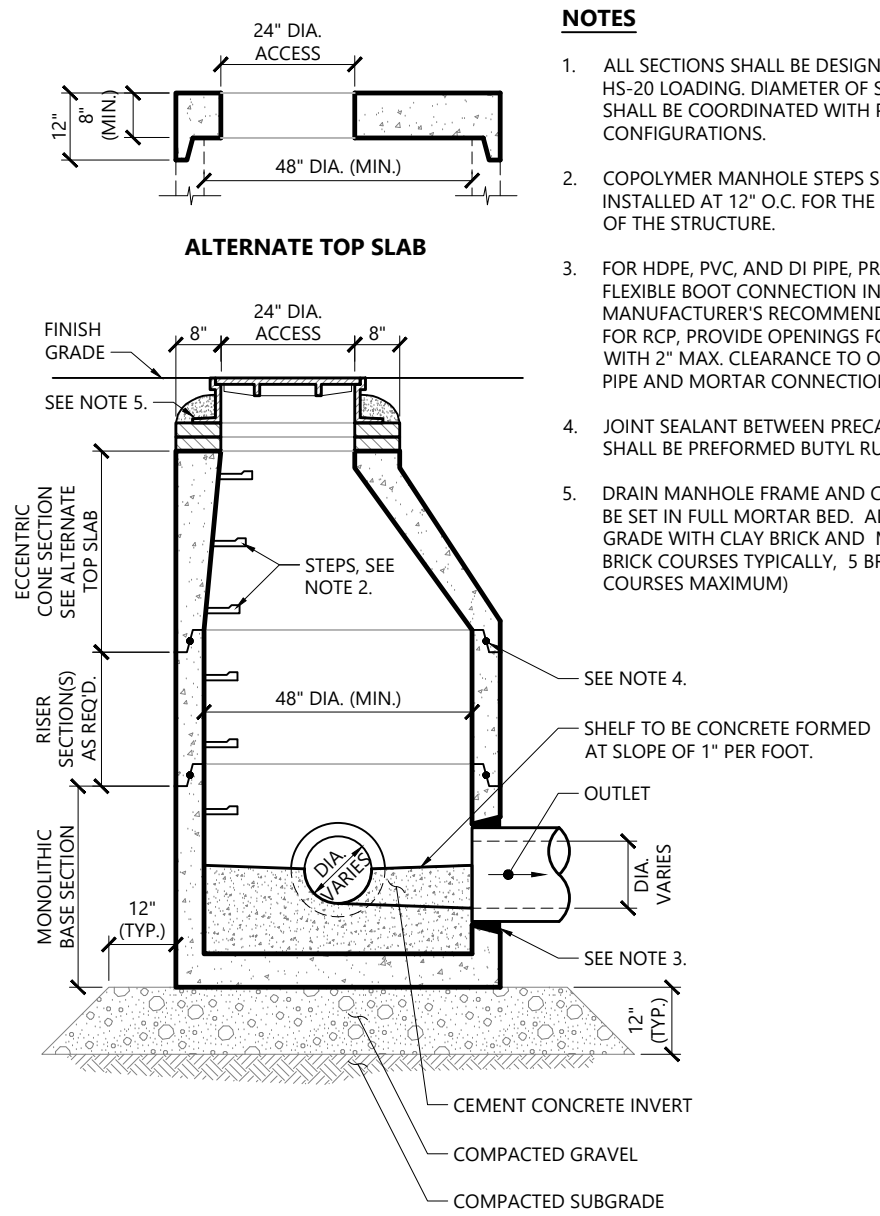


NOTES

- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
- FOR HDPE, PVC, AND DI PIPE, PROVIDE FLEXIBLE BOOT CONNECTION INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FOR RCP, PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE AND MORTAR CONNECTIONS.
- JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
- DOUBLE CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

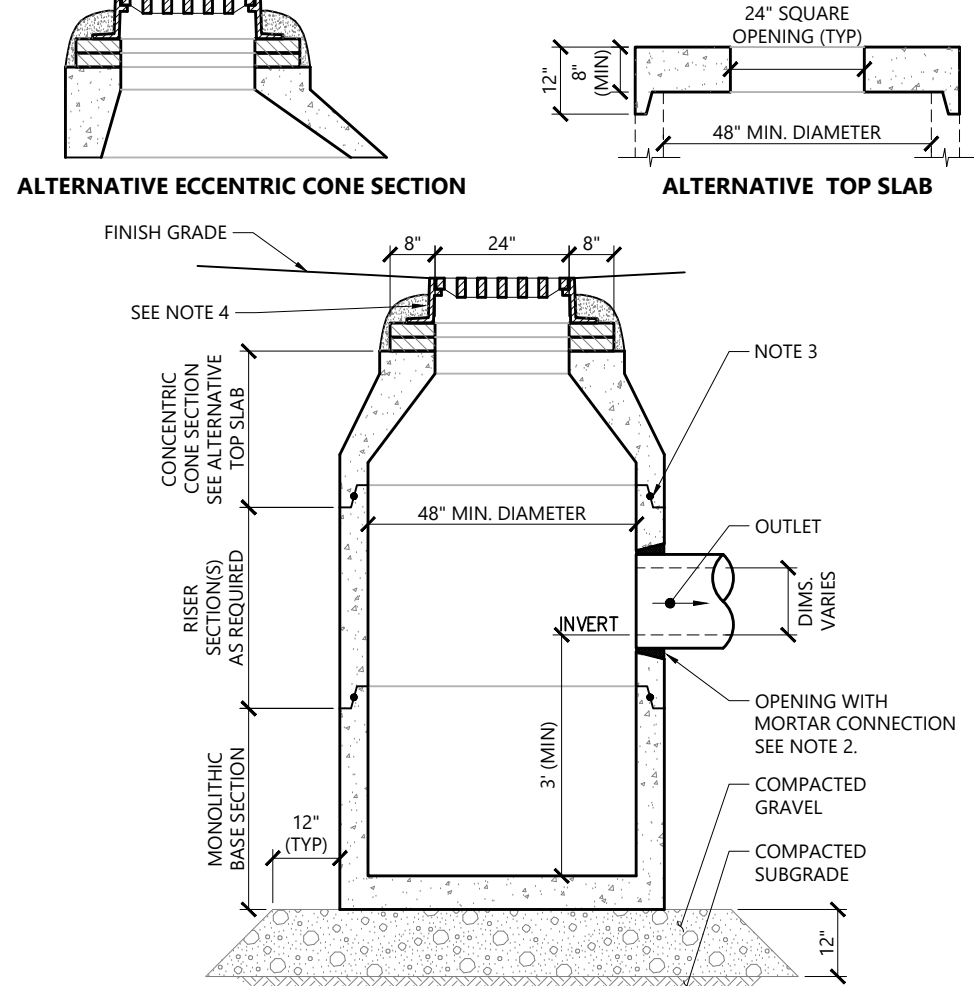
Double Grate Catch Basin (DCB)

|        |             |     |        |
|--------|-------------|-----|--------|
| N.T.S. | Source: VHB | REV | LD_102 |
|--------|-------------|-----|--------|



Drain Manhole (DMH)

|        |             |     |        |
|--------|-------------|-----|--------|
| N.T.S. | Source: VHB | REV | LD_115 |
|--------|-------------|-----|--------|

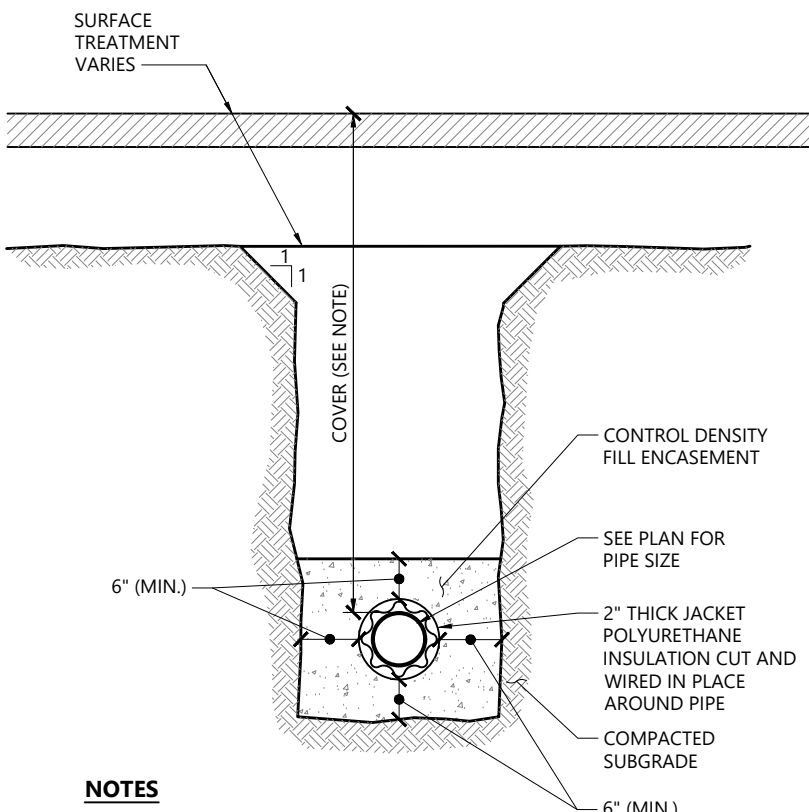


NOTES

- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
- PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
- JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
- CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Catch Basin (CB)

|        |             |     |           |
|--------|-------------|-----|-----------|
| N.T.S. | Source: VHB | REV | LD_100-NH |
|--------|-------------|-----|-----------|

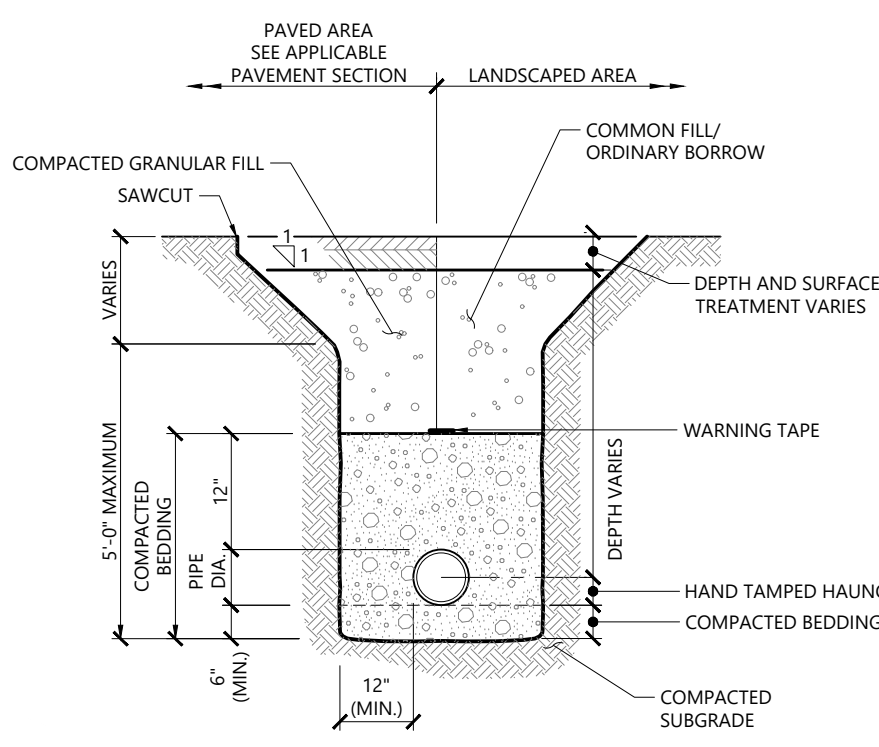


NOTES

- SEWER LINE SHALL BE INSULATED WHEN COVER IS LESS THAN FOUR (4) FEET AND WHERE SHOWN ON PLANS
- WATER LINE SHALL BE INSULATED WHEN COVER IS LESS THAN FIVE (5) FEET AND WHERE SHOWN ON PLANS
- BACKFILL PLACED IN UTILITY TRENCHES INCLUDING DISTURBED AREAS SURROUNDING UTILITY TRENCHES SHALL BE PLACED AND COMPACTED IN 12" (MAX) VERTICAL LIFTS.

Utility - Pipe Insulation

|        |             |     |        |
|--------|-------------|-----|--------|
| N.T.S. | Source: VHB | REV | LD_304 |
|--------|-------------|-----|--------|

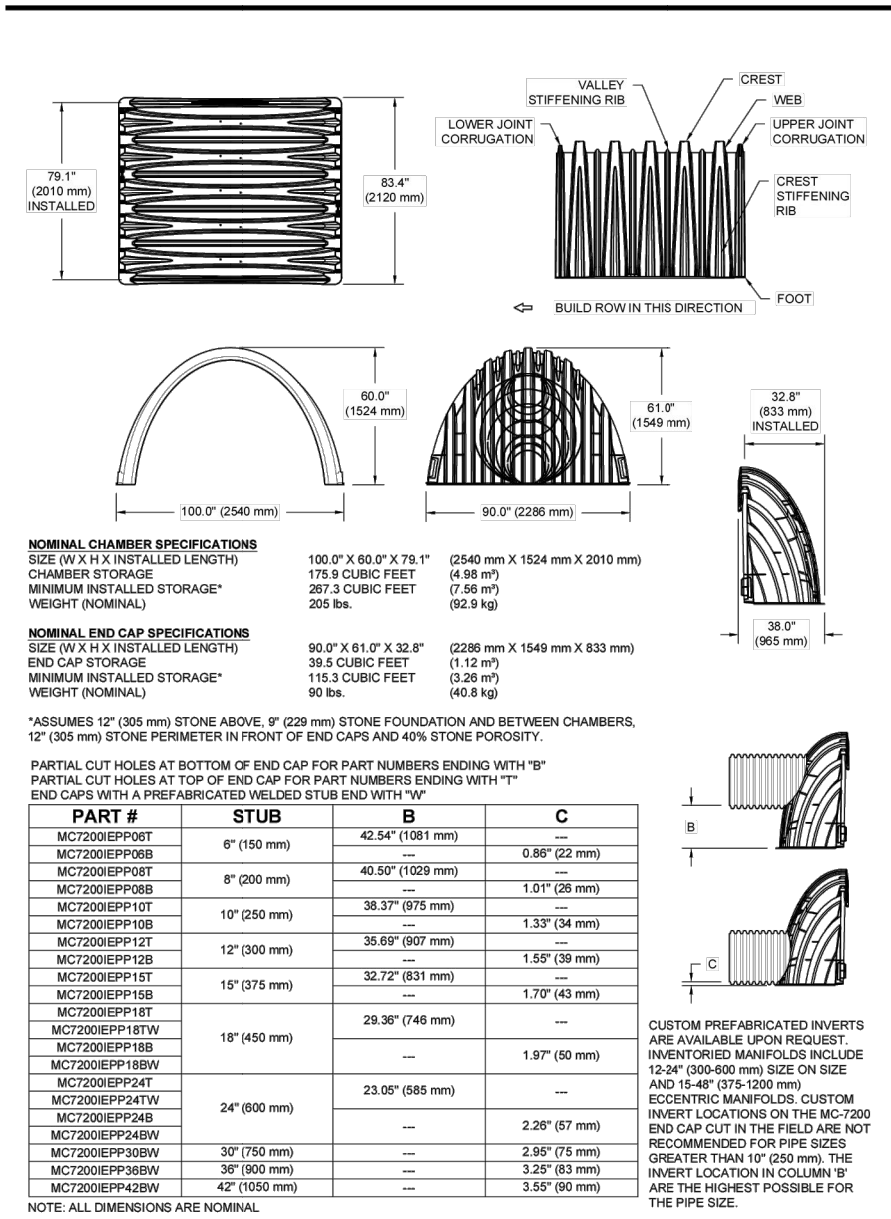


NOTES

- WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
- USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.
- COMPACTED GRANULAR FILL MAY CONSIST OF GRAVEL, CRUSHED STONE, SAND, OR OTHER MATERIAL AS APPROVED BY ENGINEER.

Utility Trench

|        |             |     |        |
|--------|-------------|-----|--------|
| N.T.S. | Source: VHB | REV | LD_300 |
|--------|-------------|-----|--------|

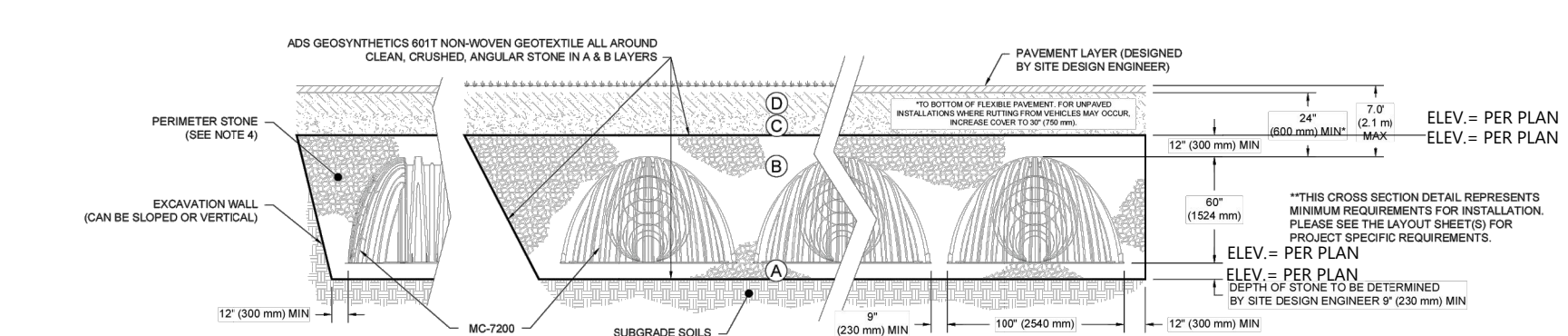


MC-7200 TECHNICAL SPECIFICATIONS

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

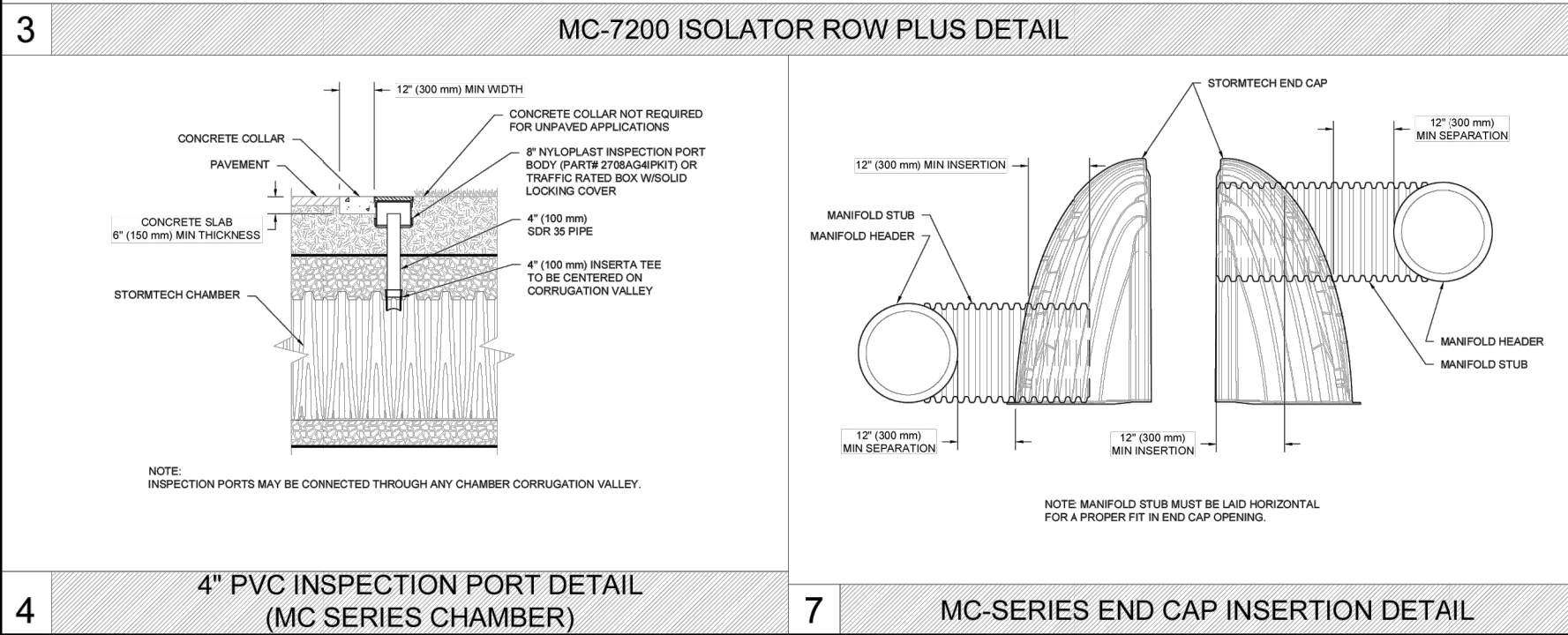
| MATERIAL LOCATION | DESCRIPTION                                                                                          | AASHTO MATERIAL CLASSIFICATIONS                                                                                 | COMPACTION / DENSITY REQUIREMENT                                                                                        |
|-------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| D                 | FINAL FILL MATERIAL BELOW 1\"/>                                                                      | ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS. | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRONGER MATERIALS AND PREPARATION REQUIREMENTS. |
| C                 | INITIAL FILL FILL MATERIAL FOR LAYER 1\"/>                                                           | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <10% FINES OR PROCESSED AGGREGATE.                                | BENCH COMPACTATIONS AFTER 34\"/>                                                                                        |
| B                 | UNDERSTONE STONE FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (LAYER) TO THE LAYER ABOVE. | CLEAN, CRUSHED, ANGULAR STONE.                                                                                  | NO COMPACTION REQUIRED.                                                                                                 |
| A                 | FOUNDATION STONE FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE BOTTOM (FOOT) OF THE CHAMBER.       | CLEAN, CRUSHED, ANGULAR STONE.                                                                                  | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE <sup>1,2</sup>                                                          |

PLEASE NOTE:  
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE."  
2. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.  
3. WHERE APPLICATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR GRADING WITHOUT EQUIPMENT\* FOR SPECIAL LOAD CONDITIONS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.  
4. ONCE LAYER "C" IS PLACED, ANY SUBGRADE CAN BE PLACED IN LAYER "D" UP TO THE FINISHED GRADE. MOST PAVEMENT SUBGRADE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER "C" OR "D" AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL, STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION B6101.
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2727 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTERNAL, INTERLOCKING STACING LOGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 7\"/>
  - TO ENSURE THE INTEGRITY OF THE JOINT AND GRADE DURING INSTALLATION, THE JOINT STIFFNESS CONTANT AS DEFINED IN SECTION 2.2.2 OF ASTM F2727 SHALL BE GREATER THAN OR EQUAL TO 500 LB/FT<sup>2</sup>.
  - AND TO RESET CHAMBER DEFORMATION DURING RE-INSTALLATION (ELEVATED TEMPORARY) INSTEAD OF 7\"/>



4\"/>

MC-SERIES END CAP INSERTION DETAIL

MC-7200 CROSS SECTION DETAIL

Subsurface Detention/Infiltration System (StormTech MC-7200)

|        |                   |
|--------|-------------------|
| N.T.S. | Source: Stormtech |
|--------|-------------------|

## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                    | Date     | Appr'd |
|-----|-----------------------------|----------|--------|
| 1   | Response to Comments Update | 08/06/24 | DF     |

|             |            |
|-------------|------------|
| Designed by | Checked by |
| TMD         | MJV        |

Issued for  
Permitting  
May 10, 2024

### Not Approved for Construction

### Detail Sheet 4

Drawing Number



C7.4

Sheet 28 of 50





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR TO MANAGE PROJECT IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGS 3800 RELATIVE TO INVASIVE SPECIES.
3. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT (0.5" OF RAINFALL OR GREATER) AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
4. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
5. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
6. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.
7. AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEED, MULCHED, HAY MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 1-1/2 TONS/ACRE.
8. PERMANENT SEEDING SHALL OCCUR BETWEEN APRIL 1 AND JUNE 1, AND/OR BETWEEN AUGUST 15 AND OCTOBER 15. ALL SEEDING FROM SEPTEMBER 15 SHALL BE HAY MULCH.
9. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
10. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEED, AND MULCHED. CONTRACTOR SHALL INSTALL SILT FENCING ALONG DOWNHILL SIDE OF STOCKPILES.
11. CONTRACTOR SHALL PROVIDE TEMPORARY SEDIMENTATION BASINS TO CONTROL SEDIMENTATION AND STORMWATER RUNOFF DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL SUBMIT PROPOSED BASIN LOCATIONS, DESIGN, ETC. TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. TEMPORARY SEDIMENTATION BASINS SHALL MEET NHDES REQUIREMENTS.
12. CONTRACTOR SHALL PROVIDE NECESSARY EROSION CONTROL MEASURES TO INSURE THAT SURFACE WATER RUN-OFF FROM UNSTABILIZED AREAS DOES NOT CARRY SILT, SEDIMENT, AND OTHER DEBRIS OUTSIDE OF THE LIMITS OF WORK.
13. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - C. A MINIMUM OF 3-IN OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP, HAS BEEN INSTALLED;
  - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
14. AT NO TIME SHALL THE TOTAL UNSTABILIZED DISTURBED AREA ON-SITE BE GREATER THAN (5) FIVE ACRES.
15. ALL DITCHES, SWALES, AND DRAINAGE BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
16. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEED, WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
18. ALL PERMANENT AND TEMPORARY SEEDING SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

| PERMANENT SEEDING       | PROPORTION | GERMINATION MINIMUM | PURITY MINIMUM |
|-------------------------|------------|---------------------|----------------|
| LAWNS:                  |            |                     |                |
| CREeping RED FESCUE     | 50%        | 85%                 | 95%            |
| KENTUCKY BLUEGRASS      | 40%        | 85%                 | 90%            |
| MANHATTAN PERENNIAL RYE | 10%        | 90%                 | 95%            |
| TEMPORARY SEEDING*      | % WEIGHT   | GERMINATION MINIMUM |                |
| WINTER RYE              | 80% MIN.   | 85%                 |                |
| RED FESCUE (CREeping)   | 4% MIN.    | 80%                 |                |
| PERENNIAL RYE GRASS     | 3% MIN.    | 90%                 |                |
| RED CLOVER              | 3% MIN.    | 90%                 |                |
| OTHER CROP GRASS        | 0.5% MAX.  |                     |                |
| NOODLES WEED SEED       | 0.5% MAX.  |                     |                |
| INERT MATTER            | 1.0% MAX.  |                     |                |

\* TEMPORARY SEED FOR LAWNS SHALL ONLY BE PLANTED WHEN PERMANENT GRASSES CANNOT BE PLANTED DUE TO THE GROWING SEASON.

18. NO-MOW PLANTING MIX (FOR AREAS INDICATED ON LANDSCAPE PLAN)

THE NO-MOW PLANTING MIX SHALL BE THE "NEW ENGLAND CONSERVATION WILDLIFE MIX" AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC.

19. STORMWATER BASIN PLANTING MIX (FOR BOTTOM OF DETENTION BASIN)

THE STORMWATER BASIN PLANTING MIX SHALL BE THE "NEW ENGLAND EROSION-CONTROL / RESTORATION MIX (FOR DETENTION BASINS AND MOIST SITES) AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC., AMHERST, MA. (413) 256-1752

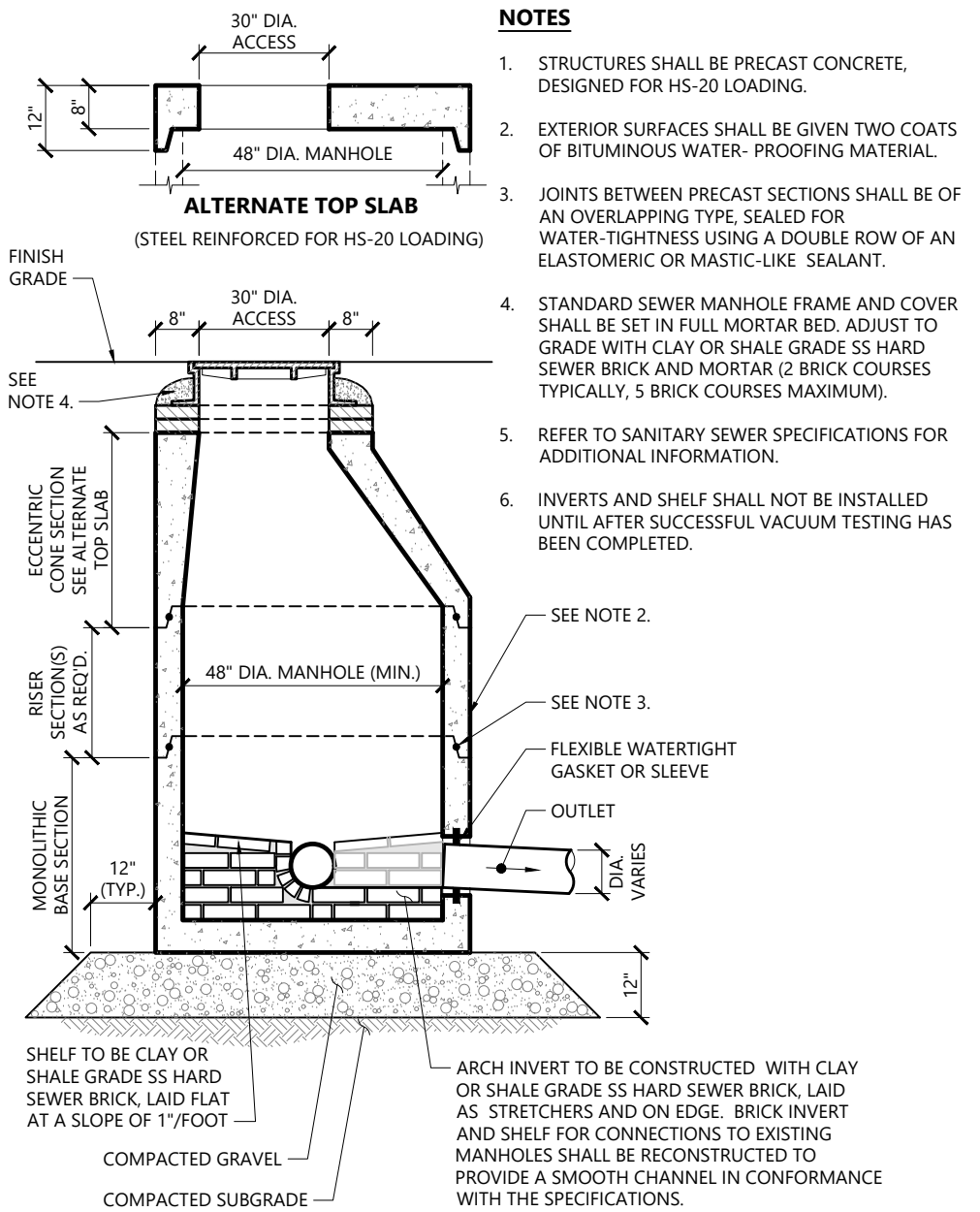
18. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES THAT ARE STEEPER THAN 3-FT HORIZONTAL AND 1-FT VERTICAL (3:1). EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN SC150BN, OR APPROVED EQUAL.

NHDES WINTER NOTES

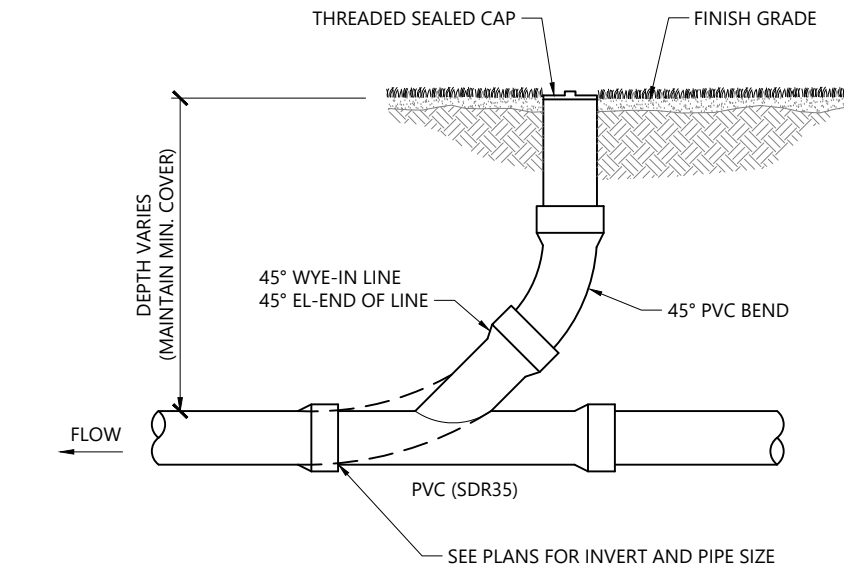
1. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

NHREG PERMIT CONDITIONS

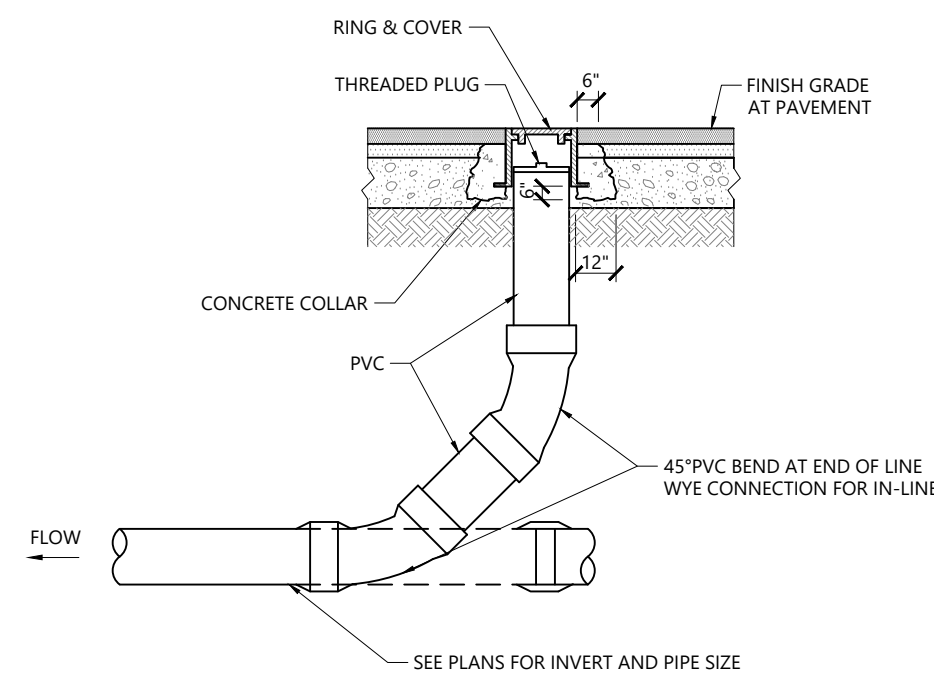
1. EROSION CONTROL MATERIALS SUCH AS WELDED PLASTIC OR "BIODEGRADABLE PLASTIC" NETTING OF THREAD (E.G. POLYPROPYLENE) SHALL NOT BE USED. THE USE OF EROSION CONTROL BERM, WHITE FILTREXX, DEGRADABLE WOVEN SILT SOCK OR WOVEN ORGANIC MATERIALS (E.G. COCO OR JUTE MATTING SUCH AS NORTH AMERICAN GREEN SC150BN) SHALL BE USED.



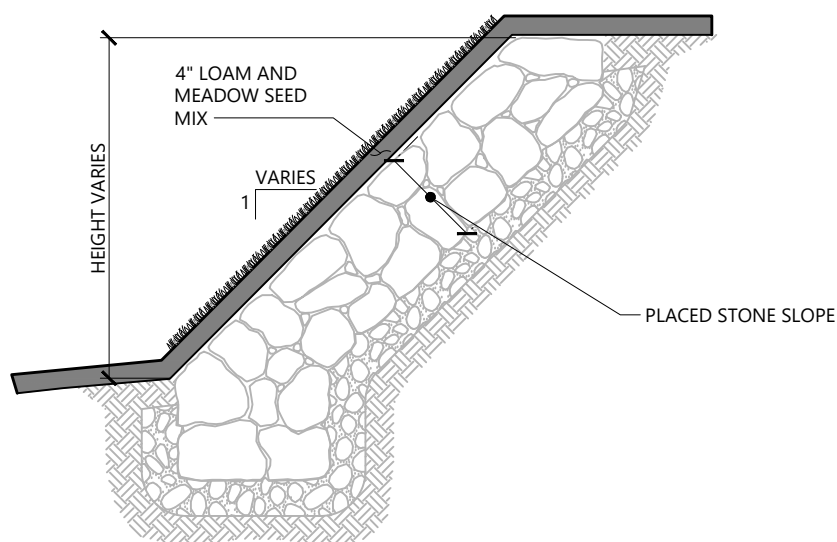
Sanitary Sewer Manhole (SMH) 1/16  
N.T.S. Source: VHB REV LD\_200 NH



Cleanout - Landscape Area 1/16  
N.T.S. Source: VHB LD\_302



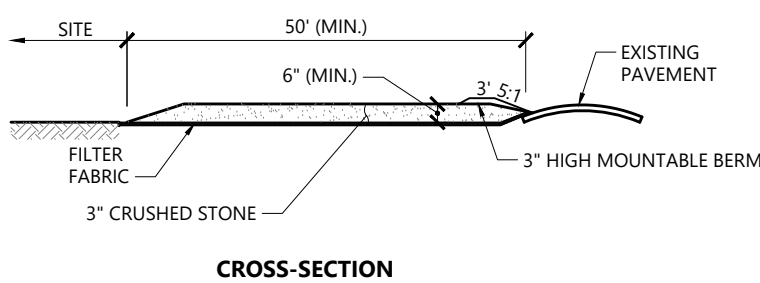
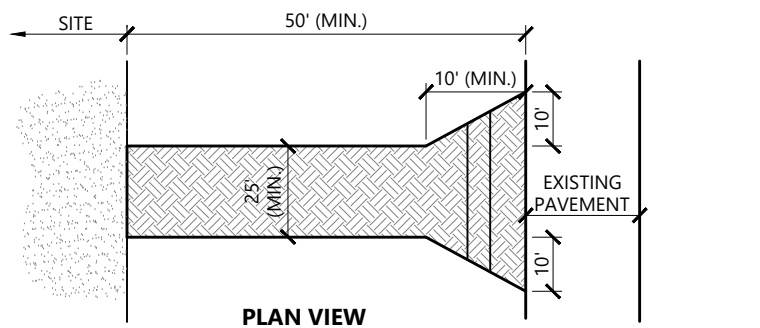
Cleanout - Paved Area 1/16  
N.T.S. Source: VHB LD\_303



NOTES

1. EROSION CONTROL BLANKETS SHALL BE USED DURING GROWTH.
2. CONTRACTOR TO REPAIR SLOPE IF EVIDENCE OF EROSION IS PRESENT PRIOR TO CERTIFICATE OF OCCUPANCY.
3. CONTRACTOR TO ENSURE 4" OF LOAM ABOVE FACE OF ROCK.

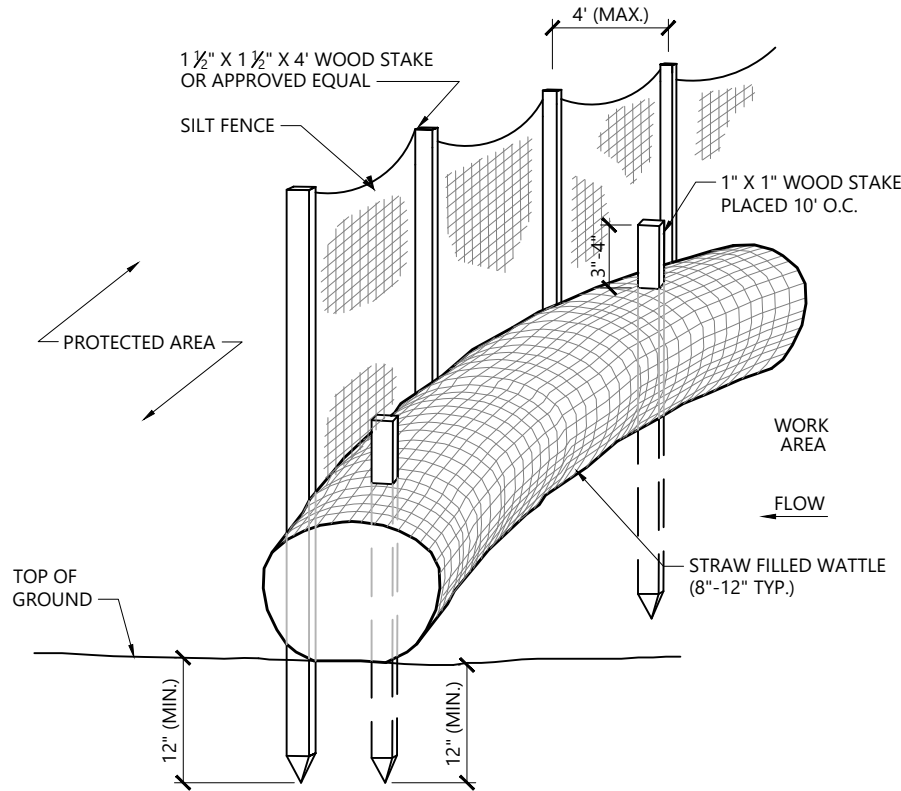
Loam and Meadow Mix Stone Slope 1/16  
N.T.S. Source: VHB REV LD\_760



NOTES

1. EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

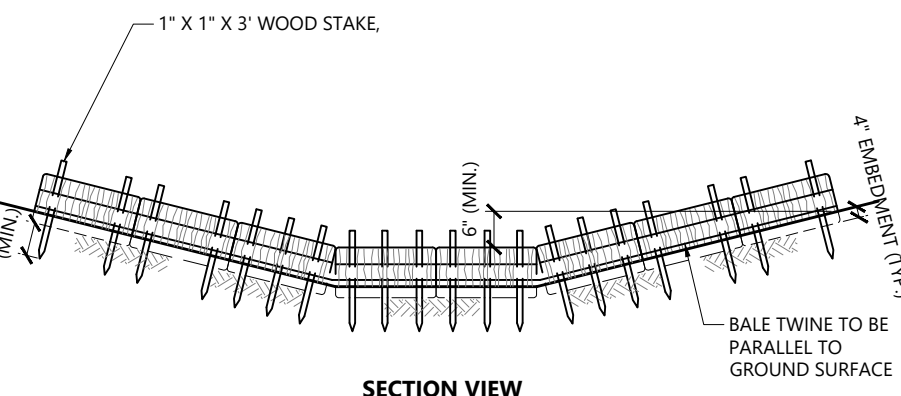
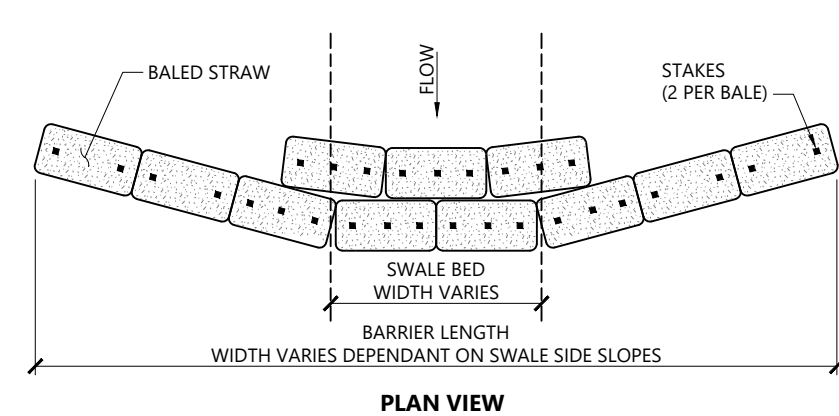
Stabilized Construction Exit 5/17  
N.T.S. Source: VHB REV LD\_682-NH



NOTES

1. STRAW WATTLE SHALL BE AS MANUFACTURED BY EARTHSAVER OR APPROVED EQUAL.
2. STRAW WATTLES SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. STRAW WATTLE SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. TEMPORARY STRAW WATTLES TO BE REMOVED BY CONTRACTOR. ALL OTHERS TO REMAIN IN PLACE UNLESS DIRECTED OTHERWISE BY ENGINEER.
5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Straw Wattle - Erosion Control Barrier 10/21  
N.T.S. Source: VHB REV LD\_659-A

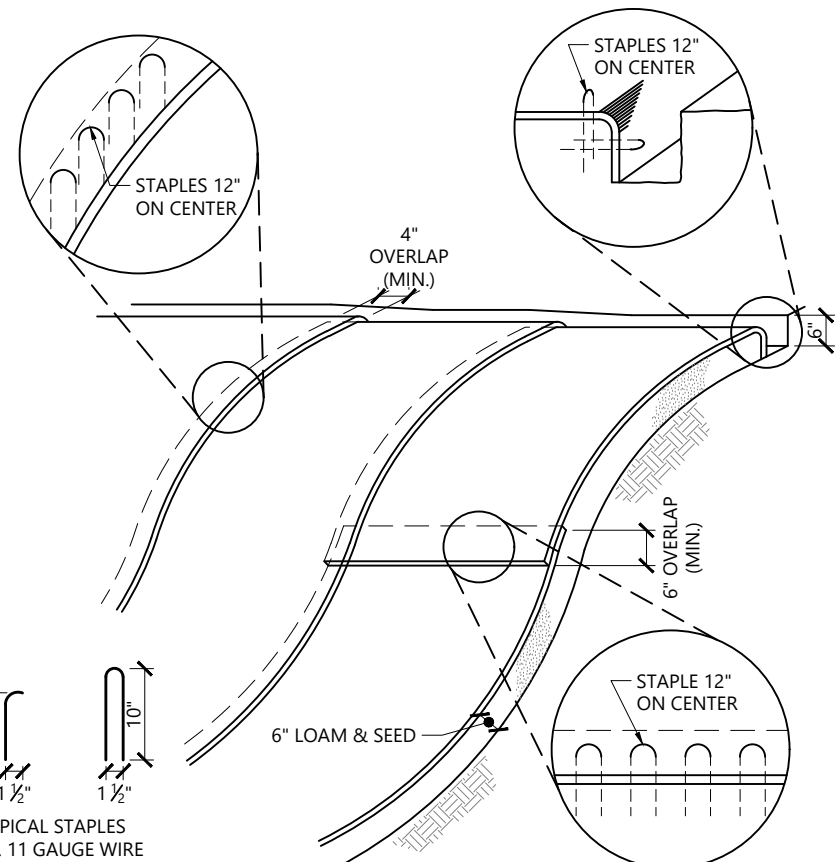


NOTES

1. THIS CHECKDAM SHALL BE INSTALLED IN A DRAINAGE SWALE WITH BED WIDTHS OF 2 FT. OR MORE.
2. THE DISTANCE BETWEEN BALE CHECKDAMS SHALL BE DETERMINED BY THE SLOPE OF THE SWALE. CHECKDAMS SHALL BE SET AT EVERY 2 FT. DROP IN SWALE ELEVATION.
3. BALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. INSTALL 3 STAKES PER BALE WITHIN SWALE BED AREA.

Straw Bale Checkdam (Wide Swale) 1/16  
N.T.S. Source: VHB REV LD\_670

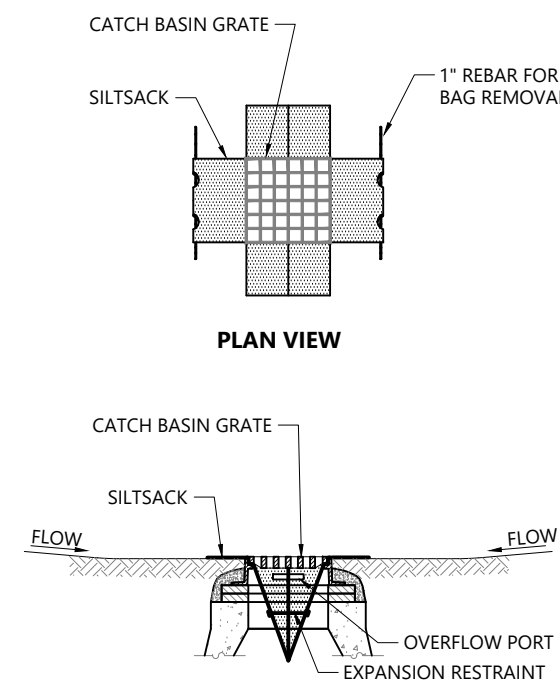
Catch Basin Sediment Trap 1/16  
N.T.S. Source: VHB REV LD\_673



NOTES

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE UPPER BLANKET END OVER LOWER END WITH 6 INCH (MIN) OVERLAP AND STAPLE BOTH TOGETHER.
5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
6. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

Erosion Control Blanket Slope Installation 10/20  
N.T.S. Source: VHB REV LD\_680



NOTES

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND STRAW BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.

Siltsock Sediment Trap 1/21  
N.T.S. Source: VHB REV LD\_671

Placed Stone Slope 1/16  
N.T.S. Source: VHB LD\_760

## The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

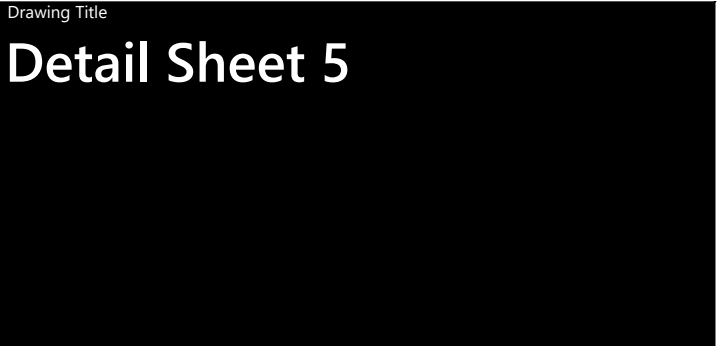
| No. | Revision                    | Date     | Appr. |
|-----|-----------------------------|----------|-------|
| 1   | Response to Comments Update | 08/06/24 | DF    |
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Issued for May 10, 2024

Permitting

Not Approved for Construction



C7.5

Sheet 29 of 50

Project Number 52933.00





# Not Approved for Construction

Drawing Title

## Phasing Plans

## Note

THE INTENT OF THE PHASING OF THE PROJECT IS TO INITIALLY CONSTRUCT THE NECESSARY ROADWAYS, UTILITY INFRASTRUCTURE AND BUILDING FOUNDATIONS. THE BUILDINGS WILL THEN BE CONSTRUCTED AND OCCUPIED SEQUENTIALLY. THE PRELIMINARY SCHEDULE PROVIDED REPRESENTS THE CURRENT UNDERSTANDING OF THE INTENDED PHASING, HOWEVER IT IS SUBJECT TO CHANGE BASED ON ECONOMY, WEATHER, AND OTHER UNFORESEEN CONDITIONS.

 FOUNDATION TO BE  
CONSTRUCTED IN THIS PHASE

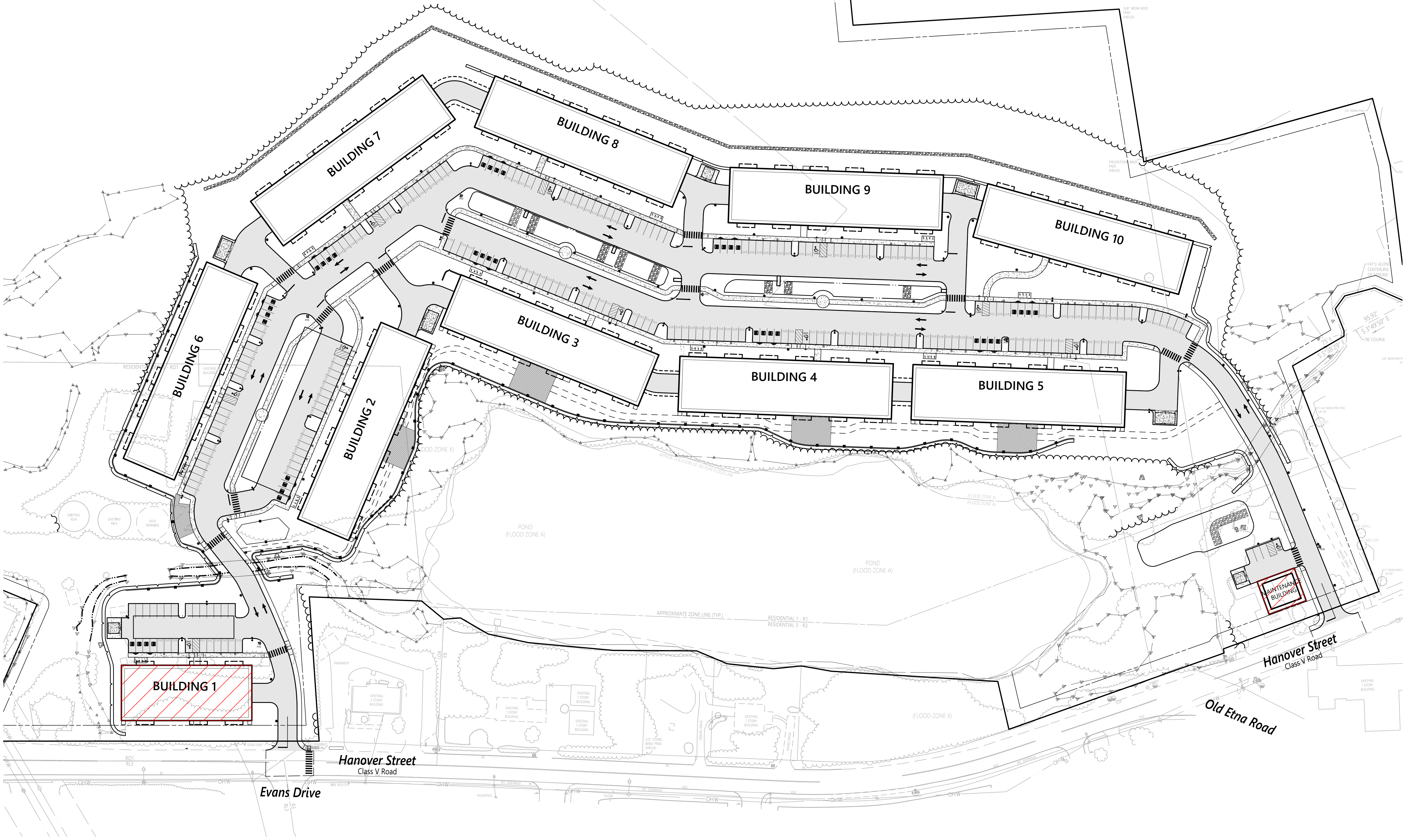
 LIMIT OF GRADING

 ROADWAY AND PARKING LOT  
INSTALLATION





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



Phasing Schedule

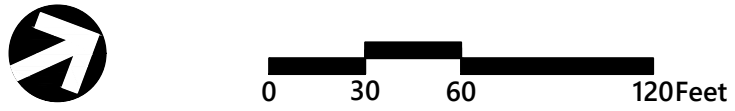
| Phase                 | Summary Of Improvements                                | Estimated Start                                                               |
|-----------------------|--------------------------------------------------------|-------------------------------------------------------------------------------|
| Phase 1               | Roadway, Utilities, Parking Lots, Building Foundations | Late 2024 - Early 2025                                                        |
| Phase 2               | Maintenance Building, Building 1                       | Late 2025 - Early 2026 Anticipated                                            |
| Phase 3 (A through I) | Buildings A-I as Occupied                              | Phase A Upon Completion of Phase 2<br>Phase B-I based on Occupancy and Market |

Note

THE INTENT OF THE PHASING OF THE PROJECT IS TO INITIALLY CONSTRUCT THE NECESSARY ROADWAYS, UTILITY INFRASTRUCTURE AND BUILDING FOUNDATIONS. THE BUILDINGS WILL THEN BE CONSTRUCTED AND OCCUPIED SEQUENTIALLY. THE PRELIMINARY SCHEDULE PROVIDED REPRESENTS THE CURRENT UNDERSTANDING OF THE INTENDED PHASING, HOWEVER IT IS SUBJECT TO CHANGE BASED ON ECONOMY, WEATHER, AND OTHER UNFORESEEN CONDITIONS.

LEGEND

- FOUNDATION TO BE CONSTRUCTED IN THIS PHASE
- BUILDING TO BE CONSTRUCTED IN THIS PHASE



The Brickyard  
Residential Development

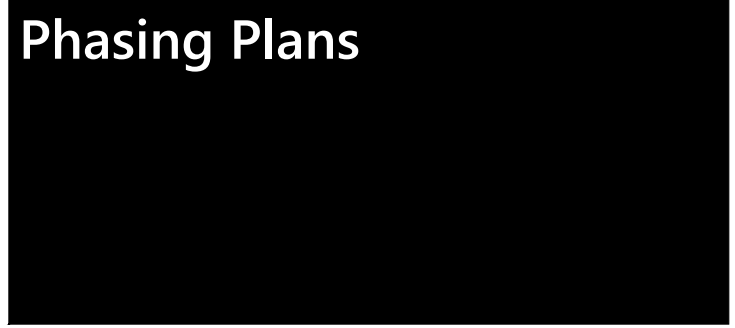
174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Issued for: Permitting Date: May 10, 2024

Not Approved for Construction



C8.2

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Project Number  
52933.00





### Note

## LEGEND

- # Not Approved for Construction
- Drawing Title
- ## Phasing Plans

## C8.3

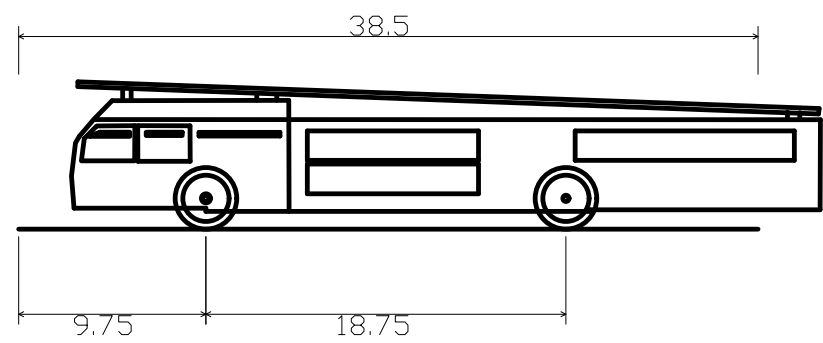
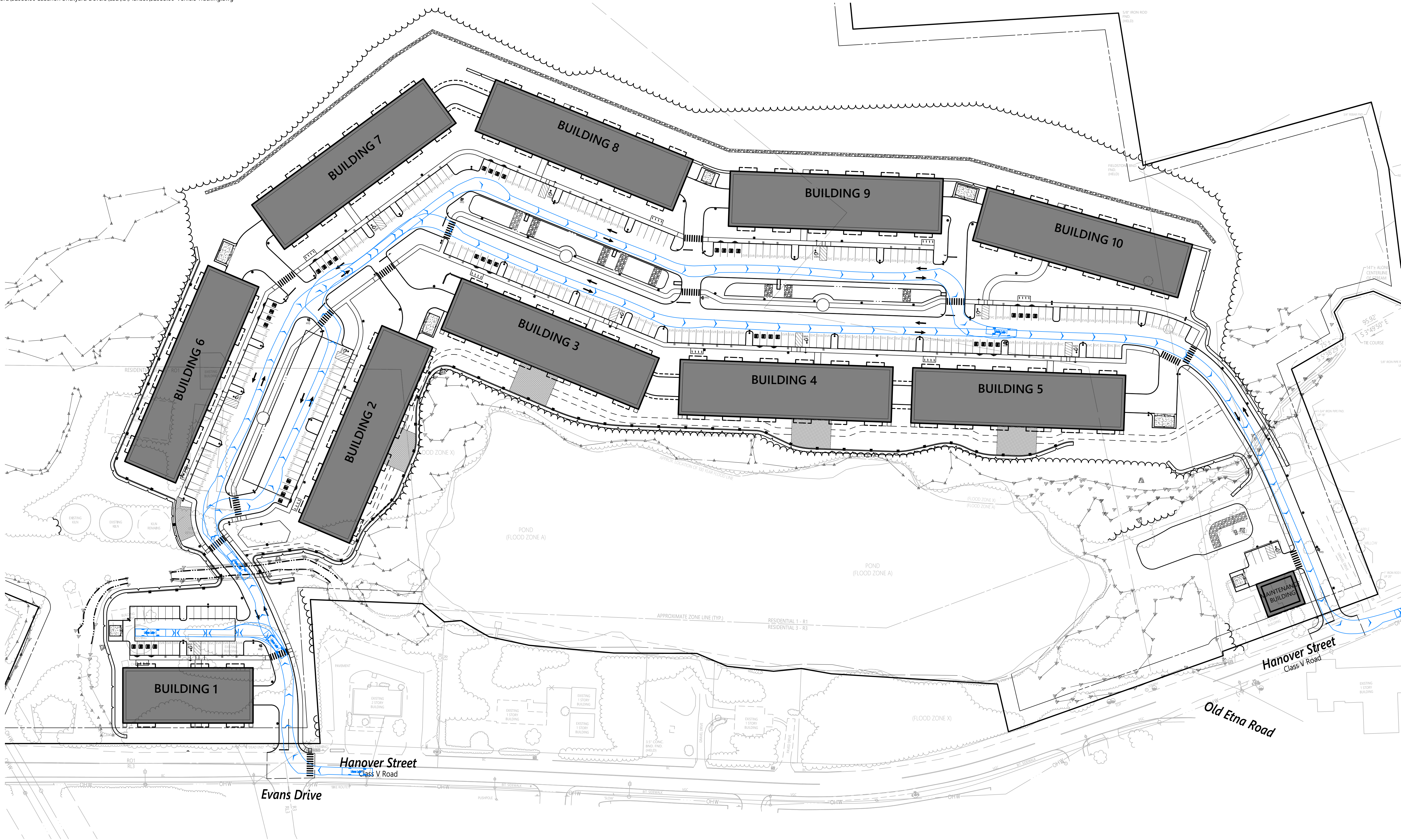
Sheet 32 of 50

Project Number  
**52933.00**

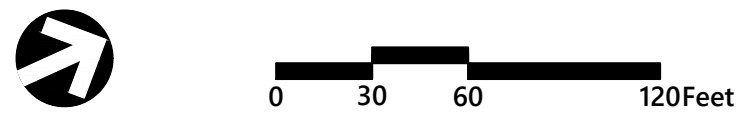




2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



Lebanon Ladder 1  
Overall Length 38.500ft  
Overall Width 9.167ft  
Overall Body Height 7.675ft  
Min Body Ground Clearance 0.925ft  
Track Width 9.167ft  
Lock-to-lock time 5.00s  
Curb to Curb Turning Radius 33.000ft



**The Brickyard  
Residential Development**

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

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Issued for  
**Permitting**

Date  
May 10, 2024

Not Approved for Construction

Drawing Title  
**Vehicle Tracking  
City of Lebanon Firetruck**



C9.1

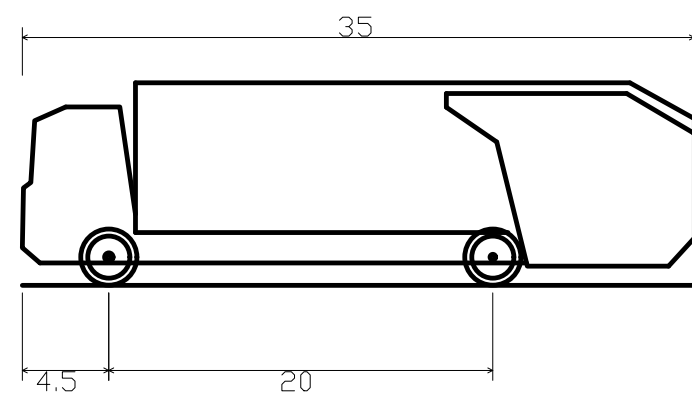
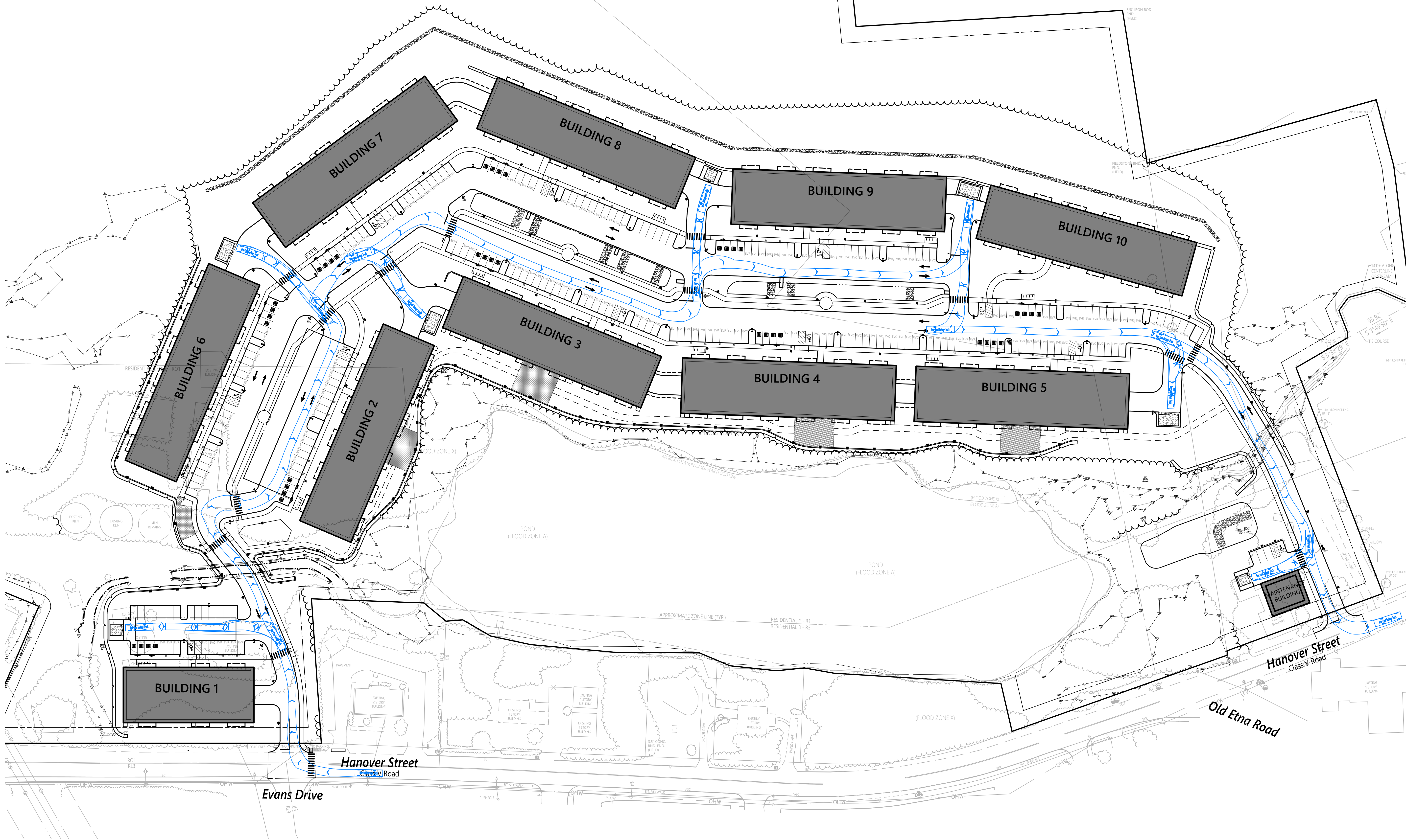
Sheet 33 of 50

Project Number  
52933.00

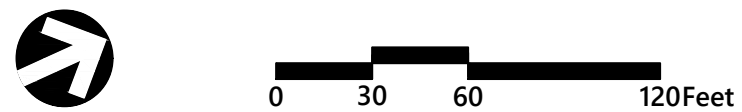




2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



Rear-Load Garbage Truck  
Overall Length 35.000ft  
Overall Width 8.375ft  
Overall Body Height 10.546ft  
Min Body Ground Clearance 1.000ft  
Track Width 8.375ft  
Lock-to-lock time 6.00s  
Curb to Curb Turning Radius 29.300ft



# The Brickyard Residential Development

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| Issued for  |     | Date       | May 10, 2024 |

Permitting

Not Approved for Construction

Vehicle Tracking  
Garbage Truck



C9.2

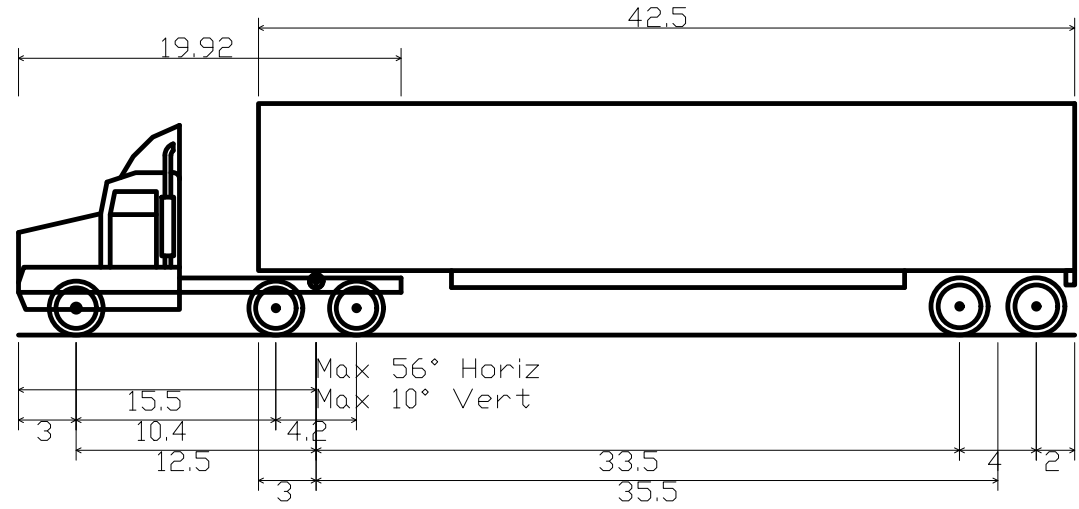
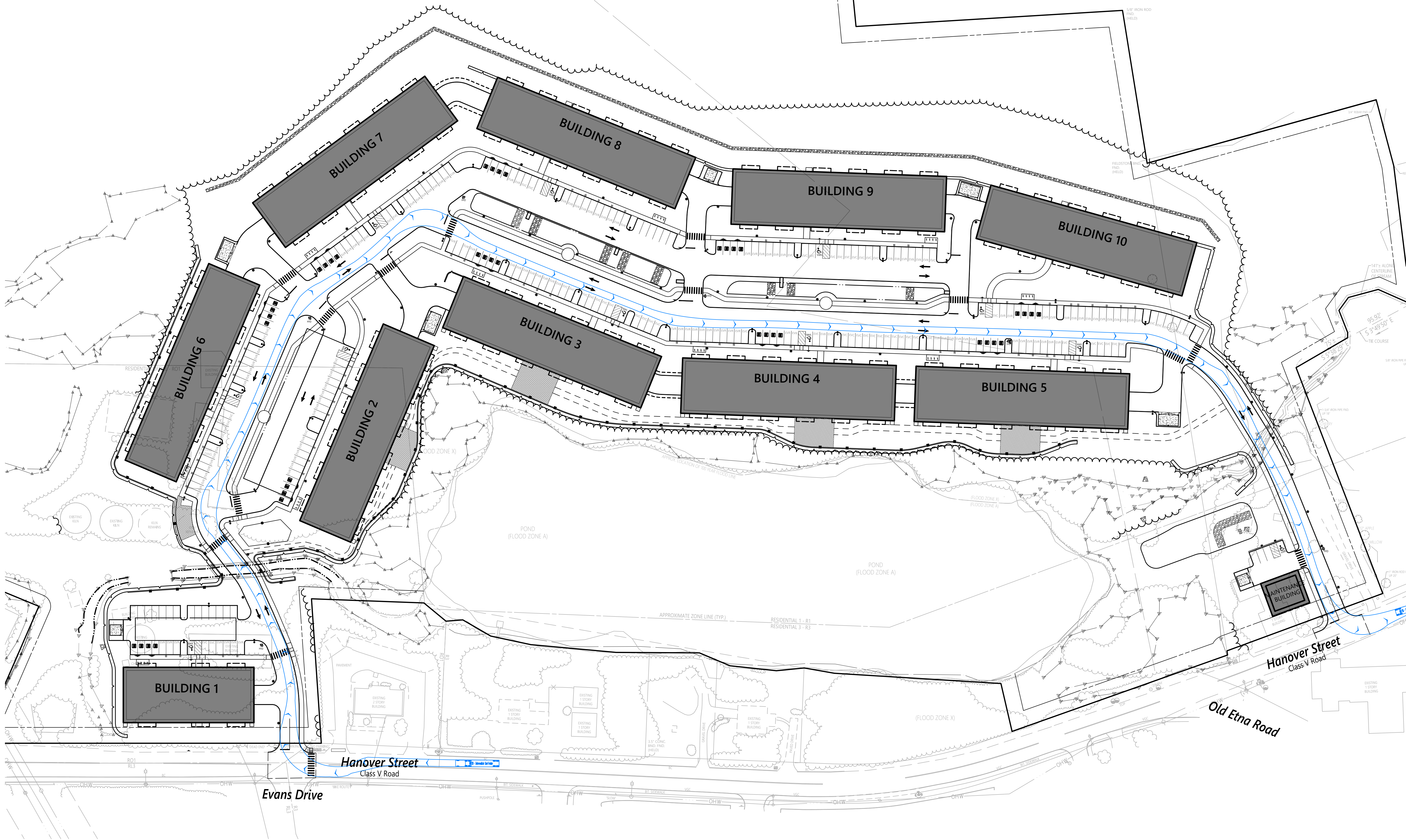
Sheet 34 of 50

Project Number  
52933.00

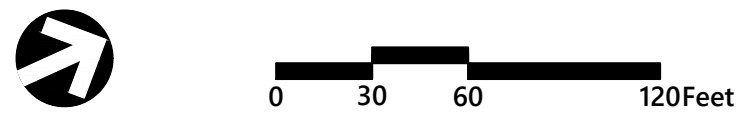




2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



WB-50 - Intermediate Semi-Trailer  
Overall Length 55.00ft  
Overall Width 8.50ft  
Overall Body Height 12.05ft  
Min Body Ground Clearance 1.33ft  
Max Track Width 8.50ft  
Lock-to-lock time 6.00s  
Max Steering Angle (Virtual) 17.90°



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May 10, 2024

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Drawing Title  
**Vehicle Tracking  
WB-50**



C9.3

Sheet 35 of 50

Project Number  
52933.00



Planting Notes

- ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL BELOW GRADE AND ABOVE GROUND UTILITIES AND NOTIFY OWNERS REPRESENTATIVE OF CONFLICTS.
- NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE OF ANY CONFLICT.
- A 3-INCH DEEP MULCH PER SPECIFICATION SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATION, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
- FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS GRAPHICALLY SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLANT LIST AND PLANT LABELS PRIOR TO BIDDING.
- ANY PROPOSED PLANT SUBSTITUTIONS MUST BE REVIEWED BY LANDSCAPE ARCHITECT AND APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE.
- ALL PLANT MATERIALS INSTALLED SHALL MEET THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND CONTRACT DOCUMENTS.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.
- AREAS DESIGNATED AS "LAWN" OR "LOAM & SEED" SHALL RECEIVE MINIMUM 6" OF LOAM AND SPECIFIED SEED MIX. LAWNS OVER 2:1 SLOPE SHALL BE PROTECTED WITH EROSION CONTROL FABRIC.
- ALL DISTURBED AREAS NOT OTHERWISE NOTED ON CONTRACT DOCUMENTS SHALL BE LOAM AND SEEDED OR MULCHED AS DIRECTED BY OWNER'S REPRESENTATIVE.
- THESE PLANS ARE INTENDED FOR PLANTING PURPOSES. REFER TO SITE / CIVIL DRAWINGS FOR ALL OTHER SITE CONSTRUCTION INFORMATION.

Plant Maintenance Notes

- CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE LAWNS AND PLANTINGS. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING FOR NEW LAWNS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. WATER SHALL BE PROVIDED BY THE CONTRACTOR.
- WATERING SHALL BE REQUIRED DURING THE GROWING SEASON, WHEN NATURAL RAINFALL IS BELOW ONE INCH PER WEEK.
- WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
- CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE FACILITY MAINTENANCE STAFF AT THAT TIME.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, TO INCLUDE GRASS AND MULCH, IN GOOD HEALTHY CONDITION SO AS TO PRESENT A NEAT AND ORDERLY APPEARANCE. THE PROPERTY OWNER SHALL REPLACE ANY UNHEALTHY OR DEAD PLANT MATERIALS IN CONFORMANCE WITH THE LANDSCAPE PLAN APPROVED BY THE BOARD AS PART OF THE SITE PLAN.
- THE PROPERTY OWNER SHALL PLANT MATERIALS APPROPRIATE TO THE SITES SOIL AND MOISTURE CONDITIONS, AS WELL AS ITS PROXIMITY TO SUBSTANTIAL OPEN SPACE AND WILDLANDS.

SHRUBS, GRASSES AND PERENNIALS SHALL BE A SELECTION OF:

| CODE       | BOTANICAL NAME                      | COMMON NAME                     |
|------------|-------------------------------------|---------------------------------|
| SHRUBS     |                                     |                                 |
| CAH        | Clethra alnifolia 'Hummingbird'     | 'Hummingbird' Summersweet       |
| CAE        | Cornus alba 'Elegantissima'         | Variegated RedTwig Dogwood      |
| CR         | Cornus racemosa                     | Gray Dogwood                    |
| CS         | Cornus sericea                      | Red Twig Dogwood                |
| CS1        | Cornus stolonifera                  | Red Osier Dogwood               |
| FG         | Fothergilla gardenii                | Dwarf Fothergilla               |
| IG         | Ilex glabra                         | Inkberry                        |
| IGS        | Ilex glabra 'Shamrock'              | Shamrock Inkberry               |
| IVR        | Ilex verticillata 'Red Sprite'      | Red Sprite Winterberry          |
| JBH        | Juniperus horizontalis 'Bar Harbor' | Bar Harbor Creeping Juniper     |
| RC         | Rhododendron x 'Cunningham's Blush' | Cunningham's Blush Rhododendron |
| RA         | Rhus aromatica 'Gro-Low'            | Gro-Low Fragrant Sumac          |
| VN         | Viburnum nudum 'Winterthur'         | Smooth Witherod                 |
| GRASSES    |                                     |                                 |
| PVS        | Panicum virgatum 'Shenandoah'       | Shenendoah Switch Grass         |
| PERENNIALS |                                     |                                 |
| H-SO       | Hemerocallis x 'Stella de Oro'      | Stella de Oro Daylily           |

- SEEDING**
- AREAS INDICATED AS "RAIN GARDEN" ARE TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL / RESTORATION MIX FOR DETENTION PONDS AND MOIST AREAS, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
  - AREAS INDICATED AS "EROSION CONTROL SEED MIX" ARE TO BE SEEDED WITH NEW ENGLAND CONSERVATION EROSION CONTROL/RESTORATION MIX FOR DRY SITES, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

PLANT SCHEDULE

| CODE            | QTY | BOTANICAL NAME                      | COMMON NAME                  | SIZE                    |
|-----------------|-----|-------------------------------------|------------------------------|-------------------------|
| DECIDUOUS TREES |     |                                     |                              |                         |
| AR              | 23  | Acer rubrum                         | Red Maple                    | 2 1/2 - 3" CAL.         |
| BN              | 35  | Betula nigra 'Heritage'             | Heritage River Birch         | 10 - 12" HT./Multi-Stem |
| NS              | 27  | Nyssa sylvatica                     | Black Tupelo                 | 2 1/2 - 3" CAL.         |
| PO              | 14  | Platanus occidentalis               | American Sycamore            | 2 1/2 - 3" CAL.         |
| TA              | 15  | Tilia americana                     | American Linden              | 2 1/2 - 3" CAL.         |
| TC              | 17  | Tilia cordata 'Greenspire'          | Greenspire Littleleaf Linden | 2 1/2 - 3" CAL.         |
| EVERGREEN TREES |     |                                     |                              |                         |
| JVB             | 9   | Juniperus virginiana 'Blue Arrow'   | Blue Arrow Juniper           | 6 - 7' HT.              |
| JVC             | 27  | Juniperus virginiana 'Corcorcor' TM | Emerald Sentinel Juniper     | 6 - 7' HT.              |
| PG              | 27  | Picea glauca                        | White Spruce                 | 6 - 7' HT.              |
| TO              | 38  | Thuja occidentalis 'Nigra'          | Dark American Arborvitae     | 6 - 7' HT.              |
| FLOWERING TREES |     |                                     |                              |                         |
| ACS             | 29  | Amelanchier canadensis              | Shadblow Serviceberry        | 8 - 10' HT./Multi-Stem  |
| MS              | 11  | Malus hybrid 'Spring Snow'          | Spring Snow Crab Apple       | 2 1/2 - 3" CAL.         |

|        |    |                                     |                                 |              |
|--------|----|-------------------------------------|---------------------------------|--------------|
| SHRUBS |    |                                     |                                 |              |
| IG     | 58 | Ilex glabra                         | Inkberry                        | 2 - 3' HT.   |
| RC     | 55 | Rhododendron x 'Cunningham's Blush' | Cunningham's Blush Rhododendron | 24 - 30" HT. |

PERIMETER LANDSCAPING

Length of southern Property Line along Hanover Street = 380' \*  
380 x 15 = 5,700  
5,700 / 600 = 9.5  
10 Shade Trees Required  
9 shade trees and 15 Evergreen Trees provided.  
5 shrubs per tree required = 50 shrubs  
51 shrubs provided.

PERIMETER LANDSCAPING

Length of northern Property Line along Hanover Street = 180' \*  
180 x 15 = 2,700  
2,700 / 600 = 4.5  
5 Shade Trees Required  
4 shade trees and 6 Evergreen Trees provided.  
5 shrubs per tree required = 25 shrubs  
25 shrubs provided.

\* Property Line length does not include 30' driveway width.

Planting Requirements

- AREAS CONTAINING ONE OR TWO ROWS OF PARKING SHALL BE PLANTED WITH DECIDUOUS TREES ALONG THE PERIMETER, SO PLACED TO SHADE 30% OF THE PARKING AREA.
- DECIDUOUS TREES TO BE A MINIMUM 2.5 TO 3 INCHES IN CALIPER.
- EVERGREEN TREES TO BE A MINIMUM OF 6 TO 7 FEET HEIGHT.

SHADE TREE CALCULATION BUILDING 1

8,690 sf parking area  
x 30% = 2,607 sf  
Shade area = 2,905 sf (33.8%)

SHADE TREE CALCULATION MAINT. BLDG.

1,890 sf parking area  
x 30% = 567 sf  
Shade area = 645 sf (34.1%)

SHADE TREE CALCULATION PARKING LOTS

97,071 sf parking area  
x 30% = 329,121 sf  
Shade area = 31,284 sf (32.2%)

The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                     | Date     | Appr'd |
|-----|------------------------------|----------|--------|
| 1   | Completeness Review Comments | 07/02/24 | DF     |

Designed by EJB  
Issued for Permitting  
Checked by  
Date May 10, 2024

Not Approved for Construction  
Drawing Title  
Overall Landscape and Tree Shading Plan



L1.0

Sheet 36 of 50

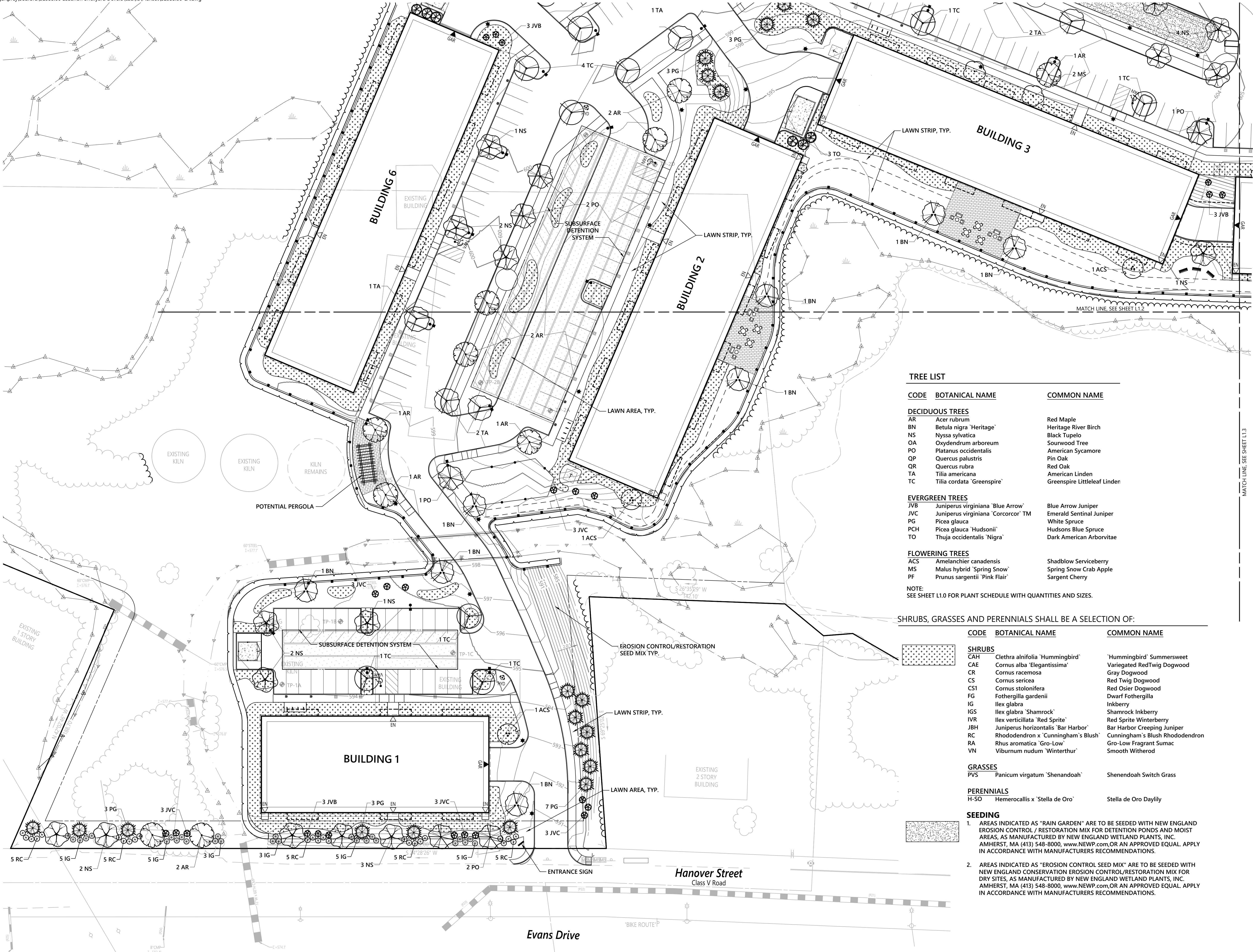
08/06/2024

Project Number  
52933.00





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



TREE LIST

| CODE            | BOTANICAL NAME                      | COMMON NAME                  |
|-----------------|-------------------------------------|------------------------------|
| DECIDUOUS TREES |                                     |                              |
| AR              | Acer rubrum                         | Red Maple                    |
| BN              | Betula nigra 'Heritage'             | Heritage River Birch         |
| NS              | Nyssa sylvatica                     | Black Tupelo                 |
| OA              | Oxydendrum arboreum                 | Sourwood Tree                |
| PO              | Platanus occidentalis               | American Sycamore            |
| QP              | Quercus palustris                   | Pin Oak                      |
| QR              | Quercus rubra                       | Red Oak                      |
| TA              | Tilia americana                     | American Linden              |
| TC              | Tilia cordata 'Greenspire'          | Greenspire Littleleaf Linden |
| EVERGREEN TREES |                                     |                              |
| JVB             | Juniperus virginiana 'Blue Arrow'   | Blue Arrow Juniper           |
| JVC             | Juniperus virginiana 'Corcorcor' TM | Emerald Sentinel Juniper     |
| PG              | Picea glauca                        | White Spruce                 |
| PCH             | Picea glauca 'Hudsonii'             | Hudsons Blue Spruce          |
| TO              | Thuja occidentalis 'Nigra'          | Dark American Arborvitae     |
| FLOWERING TREES |                                     |                              |
| ACS             | Amelanchier canadensis              | Shadblow Serviceberry        |
| MS              | Malus hybrid 'Spring Snow'          | Spring Snow Crab Apple       |
| PF              | Prunus sargentii 'Pink Flair'       | Sargent Cherry               |

NOTE:  
SEE SHEET L1.0 FOR PLANT SCHEDULE WITH QUANTITIES AND SIZES.

SHRUBS, GRASSES AND PERENNIALS SHALL BE A SELECTION OF:

| CODE       | BOTANICAL NAME                      | COMMON NAME                     |
|------------|-------------------------------------|---------------------------------|
| SHRUBS     |                                     |                                 |
| CAH        | Clethra alnifolia 'Hummingbird'     | 'Hummingbird' Summersweet       |
| CAE        | Cornus alba 'Elegantissima'         | Variegated RedTwig Dogwood      |
| CR         | Cornus racemosa                     | Gray Dogwood                    |
| CS         | Cornus sericea                      | Red Twig Dogwood                |
| CSI        | Cornus stolonifera                  | Red Osier Dogwood               |
| FG         | Fothergilla gardenii                | Dwarf Fothergilla               |
| IG         | Ilex glabra                         | Inkberry                        |
| IGS        | Ilex glabra 'Shamrock'              | Shamrock Inkberry               |
| IVR        | Ilex verticillata 'Red Sprite'      | Red Sprite Winterberry          |
| JBH        | Juniperus horizontalis 'Bar Harbor' | Bar Harbor Creeping Juniper     |
| RC         | Rhododendron x 'Cunningham's Blush' | Cunningham's Blush Rhododendron |
| RA         | Rhus aromatica 'Gro-Low'            | Gro-Low Fragrant Sumac          |
| VN         | Viburnum nudum 'Winterthur'         | Smooth Witherod                 |
| GRASSES    |                                     |                                 |
| PVS        | Panicum virgatum 'Shenandoah'       | Shenandoah Switch Grass         |
| PERENNIALS |                                     |                                 |
| H-SO       | Hemerocallis x 'Stella de Oro'      | Stella de Oro Daylily           |

- SEEDING**
- AREAS INDICATED AS "RAIN GARDEN" ARE TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL / RESTORATION MIX FOR DETENTION PONDS AND MOIST AREAS, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
  - AREAS INDICATED AS "EROSION CONTROL SEED MIX" ARE TO BE SEEDED WITH NEW ENGLAND CONSERVATION EROSION CONTROL/RESTORATION MIX FOR DRY SITES, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

The Brickyard  
Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                     | Date     | Appr'd. |
|-----|------------------------------|----------|---------|
| 1   | Completeness Review Comments | 07/02/24 | DF      |
|     |                              |          |         |
|     |                              |          |         |
|     |                              |          |         |

Designed by  
EJB  
Checked by  
Date  
May 10, 2024

Permitting

Not Approved for Construction

Drawing Title  
Landscape  
Plan 1



L1.1

Sheet 37 of 50

08/06/2024

Project Number  
52933.00



SHRUBS, GRASSES AND PERENNIALS SHALL BE A SELECTION OF:

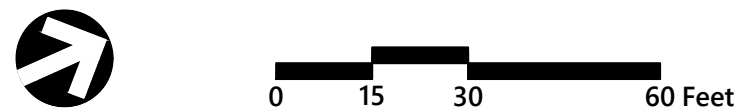
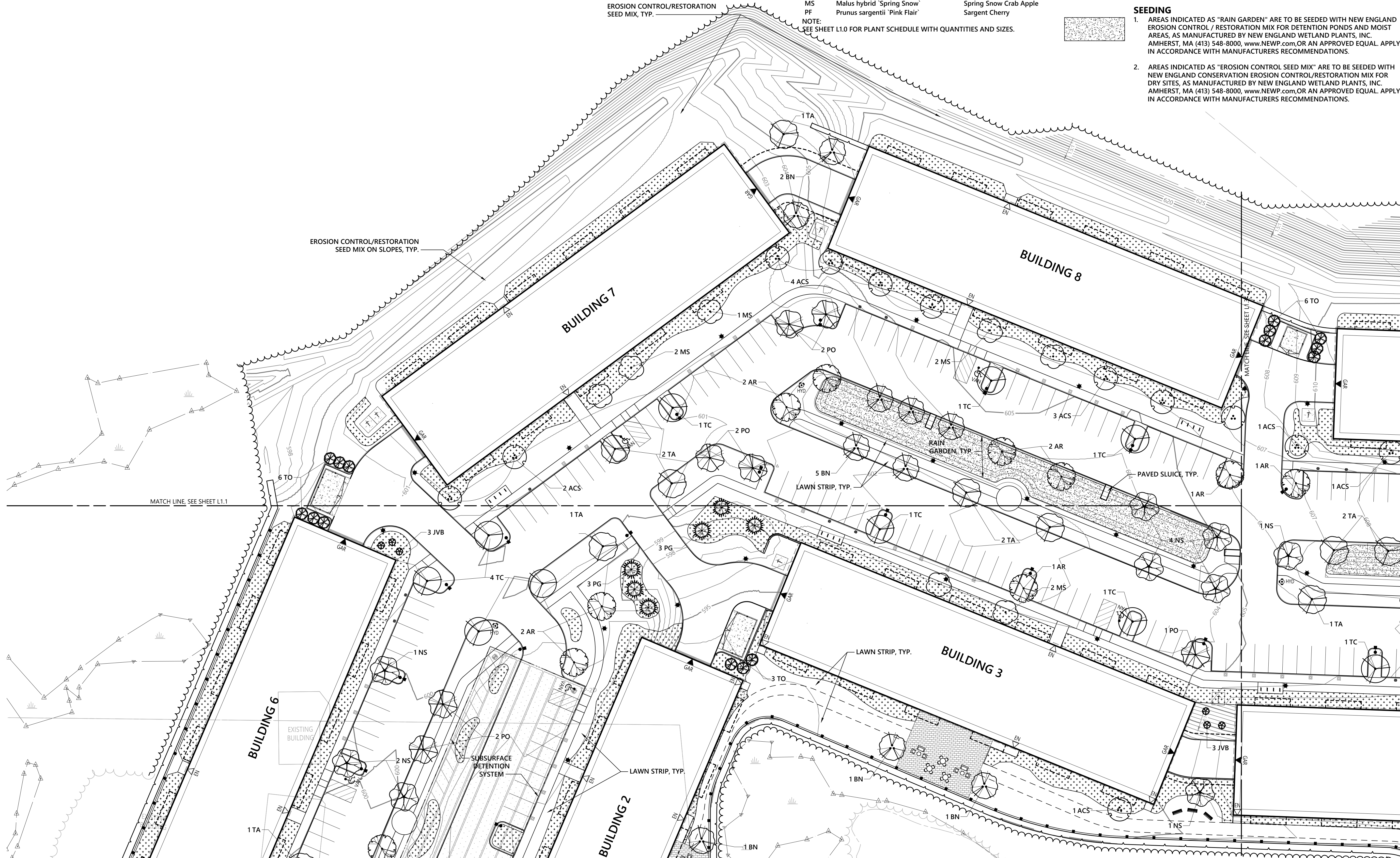
| CODE          | BOTANICAL NAME                      | COMMON NAME                     |
|---------------|-------------------------------------|---------------------------------|
| <b>SHRUBS</b> |                                     |                                 |
| CAH           | Clethra alnifolia 'Hummingbird'     | 'Hummingbird' Summersweet       |
| CAE           | Cornus alba 'Elegantissima'         | Variegated RedTwig Dogwood      |
| CRC           | Cornus racemosa                     | Gray Dogwood                    |
| CS            | Cornus sericea                      | Red Twig Dogwood                |
| CS1           | Cornus stolonifera                  | Red Osier Dogwood               |
| FG            | Fothergilla gardenii                | Dwarf Fothergilla               |
| IG            | Ilex glabra                         | Inkberry                        |
| IGS           | Ilex glabra 'Shamrock'              | Shamrock Inkberry               |
| IVR           | Ilex verticillata 'Red Sprite'      | Red Sprite Winterberry          |
| JBH           | Juniperus horizontalis 'Bar Harbor' | Bar Harbor Creeping Juniper     |
| RCR           | Rhododendron x 'Cunningham's Blush' | Cunningham's Blush Rhododendron |
| RH            | Rhus aromatica 'Gro-Low'            | Gro-Low Fragrant Sumac          |
| RVN           | Viburnum nudum 'Winterthur'         | Smooth Winterod                 |

|     |                                      |                         |
|-----|--------------------------------------|-------------------------|
| PVS | <i>Panicum virgatum</i> 'Shenandoah' | Shenandoah Switch Grass |
|-----|--------------------------------------|-------------------------|

|      |                                |                       |
|------|--------------------------------|-----------------------|
| H-SO | Hemerocallis x 'Stella de Oro' | Stella de Oro Daylily |
|------|--------------------------------|-----------------------|

1. AREAS INDICATED AS "RAIN GARDEN" ARE TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL / RESTORATION MIX FOR DETENTION PONDS AND MOST AREAS, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2. AREAS INDICATED AS "EROSION CONTROL SEED MIX" ARE TO BE SEEDED WITH NEW ENGLAND CONSERVATION EROSION CONTROL/RESTORATION MIX FOR DRY SITES, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, [www.NEWP.com](http://www.NEWP.com), OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



# The Brickyard Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                     | Date     | Appvd. |
|-----|------------------------------|----------|--------|
| 1   | Completeness Review Comments | 07/02/24 | DF     |

|             |            |
|-------------|------------|
| Designed by | Checked by |
| EJB         |            |

Permitting May 10, 2024

Not Approved for Construction

Drawing Title

# Landscape

## Plan 2



## L1.2

38 of 50

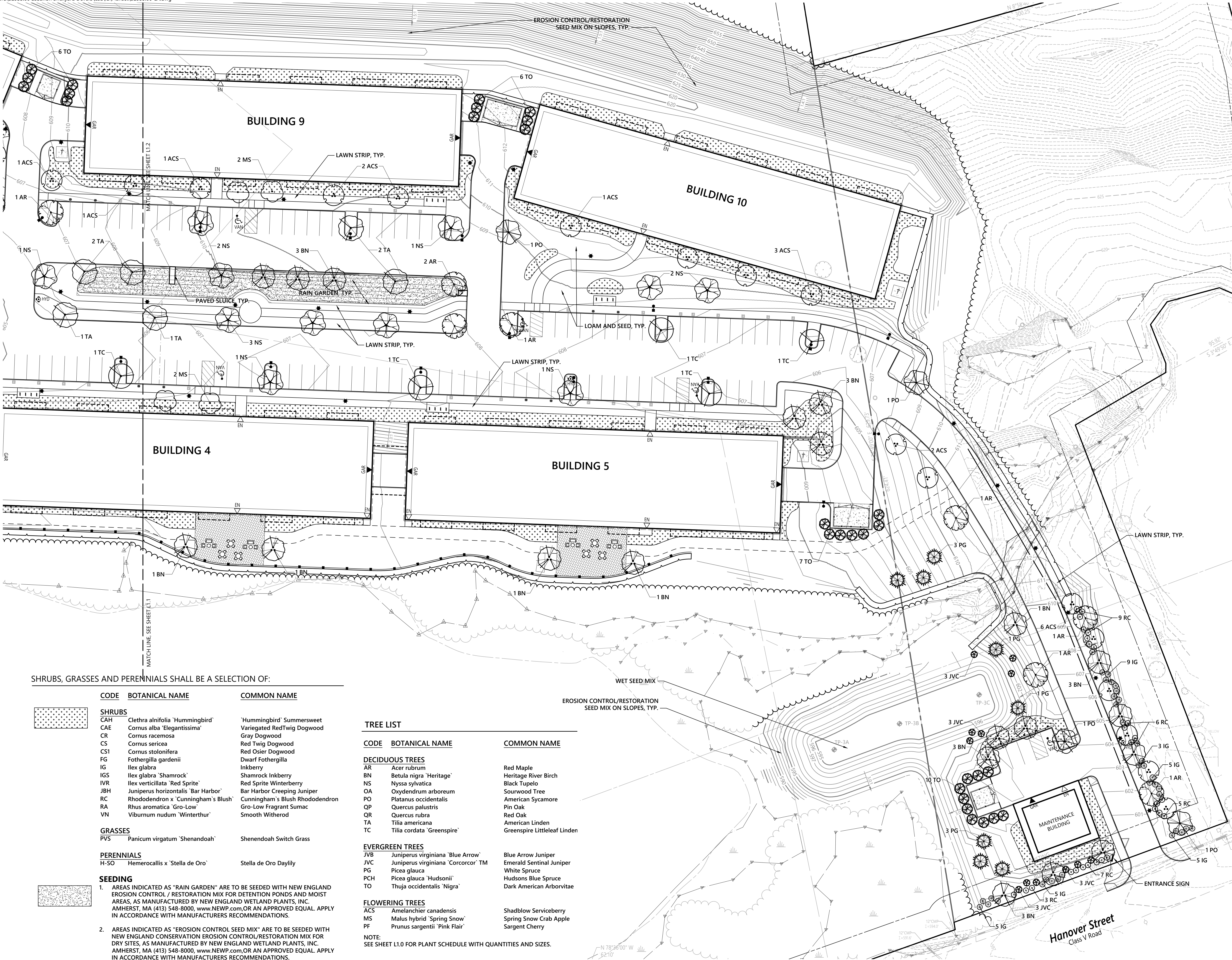
08/06/2024

Project Number  
**52933.00**





2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900



SHRUBS, GRASSES AND PERENNIALS SHALL BE A SELECTION OF:

| CODE                                                                                                                                                                                                                                                                                                                      | BOTANICAL NAME                      | COMMON NAME                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------|
| <b>SHRUBS</b>                                                                                                                                                                                                                                                                                                             |                                     |                                 |
| CAH                                                                                                                                                                                                                                                                                                                       | Clethra alnifolia 'Hummingbird'     | 'Hummingbird' Summersweet       |
| CAE                                                                                                                                                                                                                                                                                                                       | Cornus alba 'Elegantissima'         | Variegated RedTwig Dogwood      |
| CR                                                                                                                                                                                                                                                                                                                        | Cornus racemosa                     | Gray Dogwood                    |
| CS                                                                                                                                                                                                                                                                                                                        | Cornus sericea                      | Red Twig Dogwood                |
| CS1                                                                                                                                                                                                                                                                                                                       | Cornus stolonifera                  | Red Osier Dogwood               |
| FG                                                                                                                                                                                                                                                                                                                        | Fothergilla gardenii                | Dwarf Fothergilla               |
| IG                                                                                                                                                                                                                                                                                                                        | Ilex glabra                         | Inkberry                        |
| IGS                                                                                                                                                                                                                                                                                                                       | Ilex glabra 'Shamrock'              | Shamrock Inkberry               |
| IVR                                                                                                                                                                                                                                                                                                                       | Ilex verticillata 'Red Sprite'      | Red Sprite Winterberry          |
| JBH                                                                                                                                                                                                                                                                                                                       | Juniperus horizontalis 'Bar Harbor' | Bar Harbor Creeping Juniper     |
| RC                                                                                                                                                                                                                                                                                                                        | Rhododendron x 'Cunningham's Blush' | Cunningham's Blush Rhododendron |
| RA                                                                                                                                                                                                                                                                                                                        | Rhus aromatica 'Gro-Low'            | Gro-Low Fragrant Sumac          |
| VN                                                                                                                                                                                                                                                                                                                        | Viburnum nudum 'Winterthur'         | Smooth Witherod                 |
| <b>GRASSES</b>                                                                                                                                                                                                                                                                                                            |                                     |                                 |
| PVS                                                                                                                                                                                                                                                                                                                       | Panicum virgatum 'Shenandoah'       | Shenandoah Switch Grass         |
| <b>PERENNIALS</b>                                                                                                                                                                                                                                                                                                         |                                     |                                 |
| H-SO                                                                                                                                                                                                                                                                                                                      | Hemerocallis x 'Stella de Oro'      | Stella de Oro Daylily           |
| <b>SEEDING</b>                                                                                                                                                                                                                                                                                                            |                                     |                                 |
| 1. AREAS INDICATED AS "RAIN GARDEN" ARE TO BE SEEDED WITH NEW ENGLAND EROSION CONTROL / RESTORATION MIX FOR DETENTION PONDS AND MOIST AREAS, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, www.NEWP.com,OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.   |                                     |                                 |
| 2. AREAS INDICATED AS "EROSION CONTROL SEED MIX" ARE TO BE SEEDED WITH NEW ENGLAND CONSERVATION EROSION CONTROL/RESTORATION MIX FOR DRY SITES, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA (413) 548-8000, www.NEWP.com,OR AN APPROVED EQUAL. APPLY IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. |                                     |                                 |

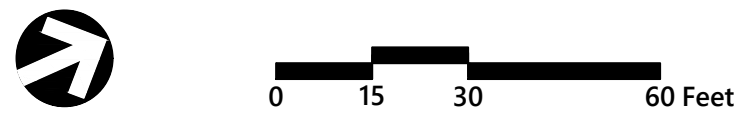
TREE LIST

| CODE                   | BOTANICAL NAME                      | COMMON NAME                  |
|------------------------|-------------------------------------|------------------------------|
| <b>DECIDUOUS TREES</b> |                                     |                              |
| AR                     | Acer rubrum                         | Red Maple                    |
| BN                     | Betula nigra 'Heritage'             | Heritage River Birch         |
| NS                     | Nyssa sylvatica                     | Black Tupelo                 |
| OA                     | Oxydendrum arboreum                 | Sourwood Tree                |
| PO                     | Platanus occidentalis               | American Sycamore            |
| QP                     | Quercus palustris                   | Pin Oak                      |
| QR                     | Quercus rubra                       | Red Oak                      |
| TA                     | Tilia americana                     | American Linden              |
| TC                     | Tilia cordata 'Greenspire'          | Greenspire Littleleaf Linden |
| <b>EVERGREEN TREES</b> |                                     |                              |
| JVB                    | Juniperus virginiana 'Blue Arrow'   | Blue Arrow Juniper           |
| JVC                    | Juniperus virginiana 'Corcorcor' TM | Emerald Sentinel Juniper     |
| PG                     | Picea glauca                        | White Spruce                 |
| PCH                    | Picea glauca 'Hudsonii'             | Hudsons Blue Spruce          |
| TO                     | Thuja occidentalis 'Nigra'          | Dark American Arborvitae     |

FLOWERING TREES

|     |                               |                        |
|-----|-------------------------------|------------------------|
| ACS | Amelanchier canadensis        | Shadblow Serviceberry  |
| MS  | Malus hybrid 'Spring Snow'    | Spring Snow Crab Apple |
| PF  | Prunus sargentii 'Pink Flair' | Sargent Cherry         |

NOTE:  
SEE SHEET L1.0 FOR PLANT SCHEDULE WITH QUANTITIES AND SIZES.



The Brickyard  
Residential Development

174 Hanover Street Extension  
Lebanon, New Hampshire 03766

| No. | Revision                     | Date     | Appr'd. |
|-----|------------------------------|----------|---------|
| 1   | Completeness Review Comments | 07/02/24 | DF      |

Designed by  
EJB

Issued for  
Permitting

Not Approved for Construction

Landscape  
Plan 3



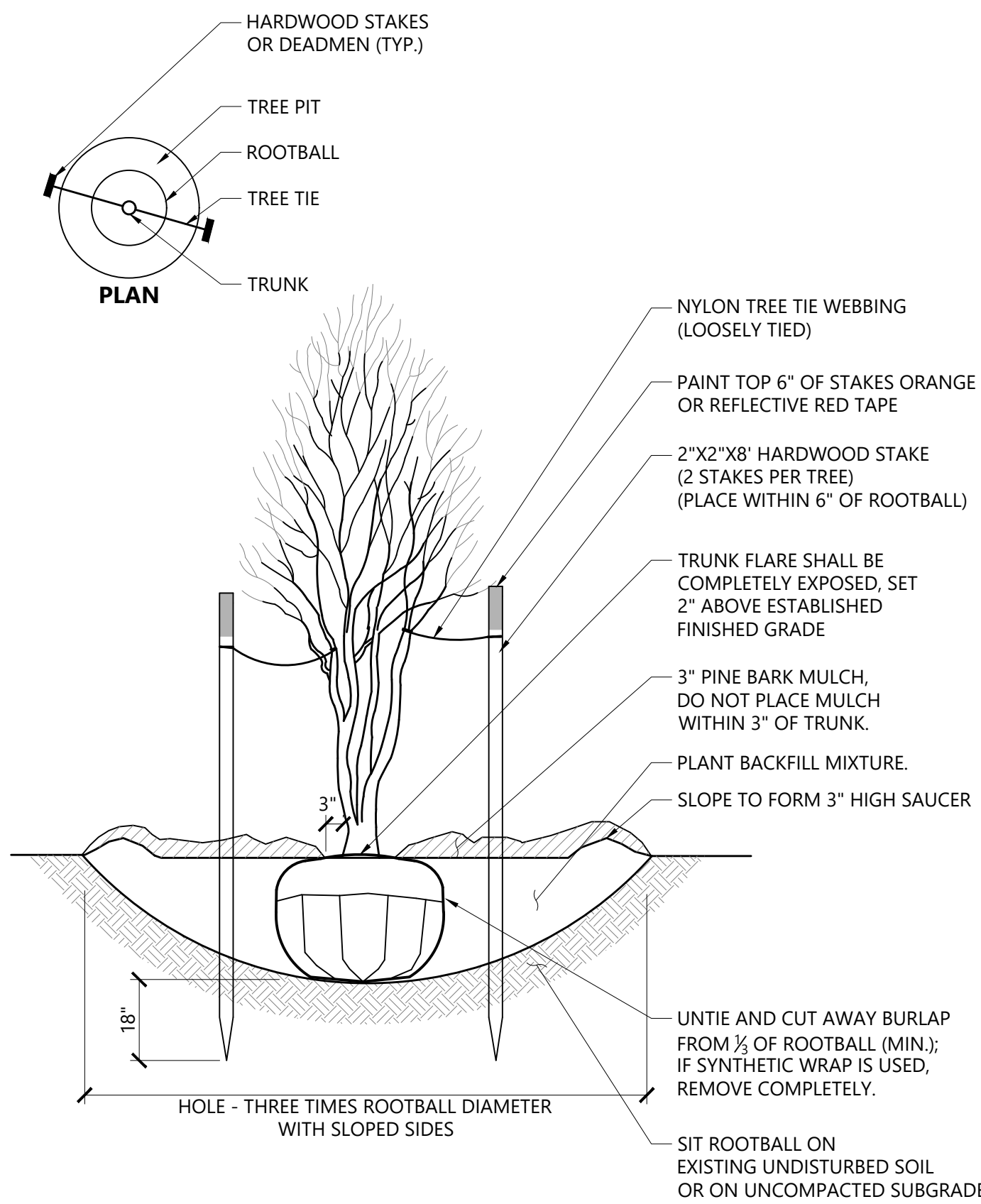
08/06/2024

L1.3

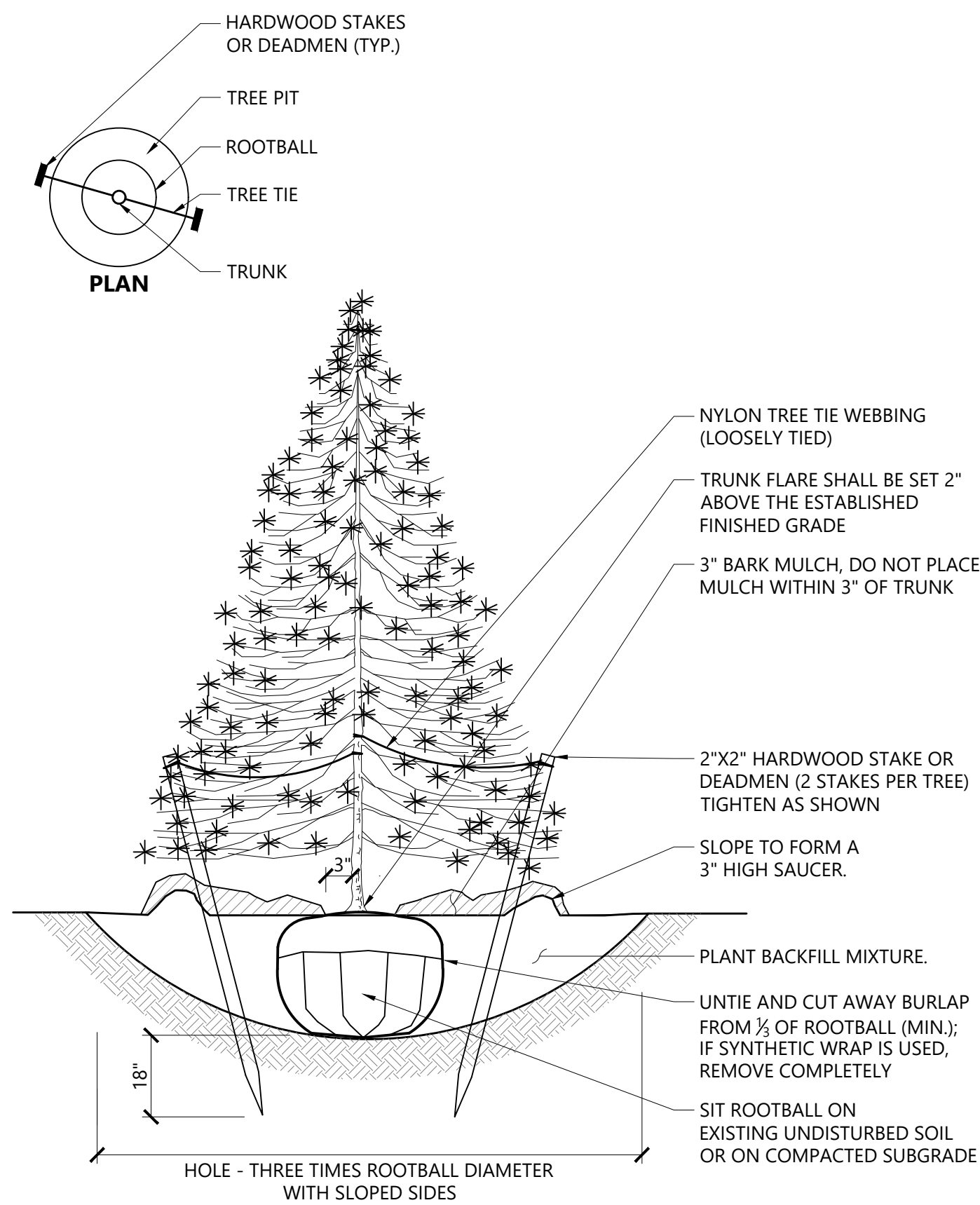
Sheet 39 of 50

Project Number  
52933.00

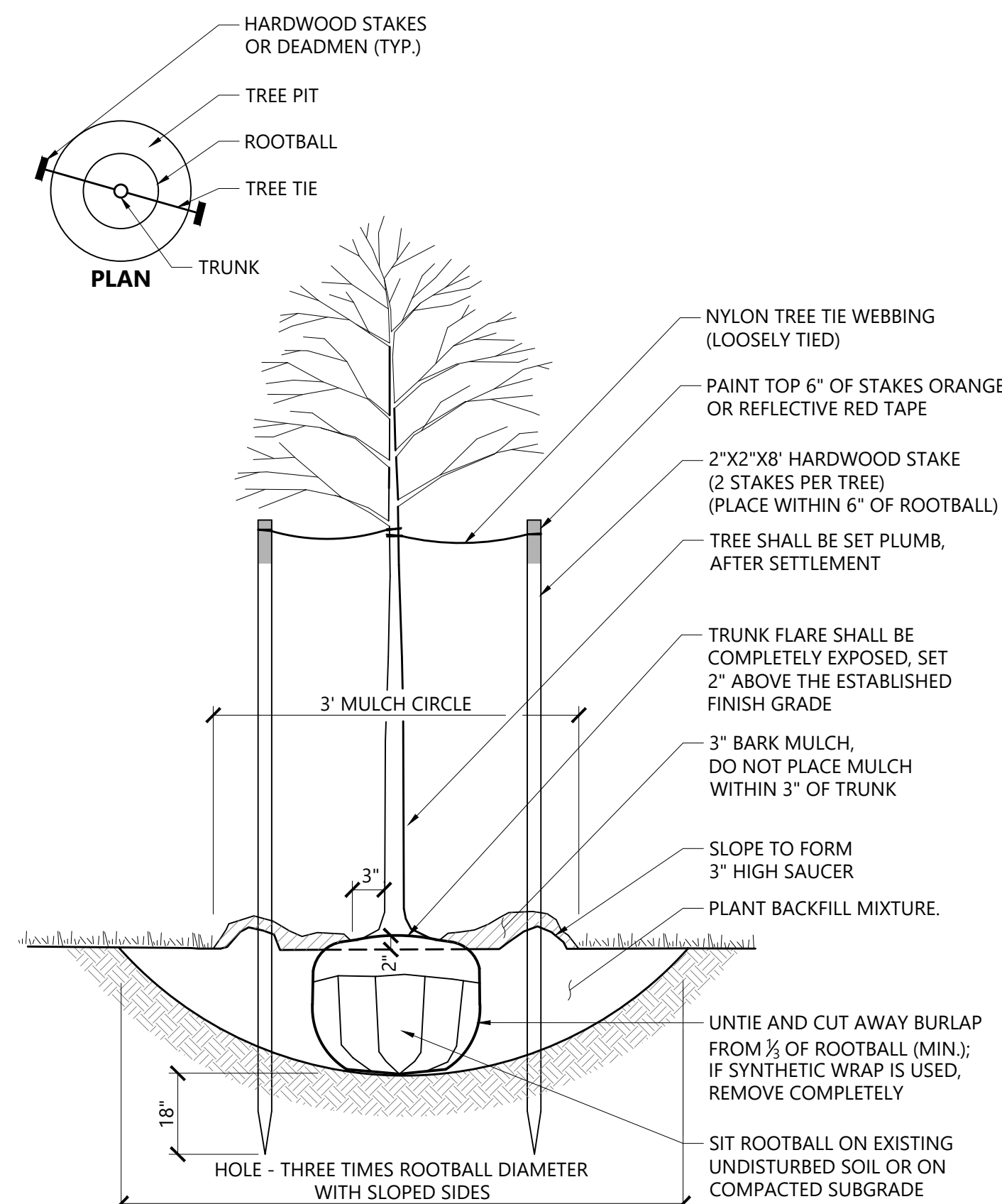




|                                |             |        |
|--------------------------------|-------------|--------|
| <b>Multistem Tree Planting</b> |             | 9/21   |
| N.T.S.                         | Source: VHB | LD_606 |

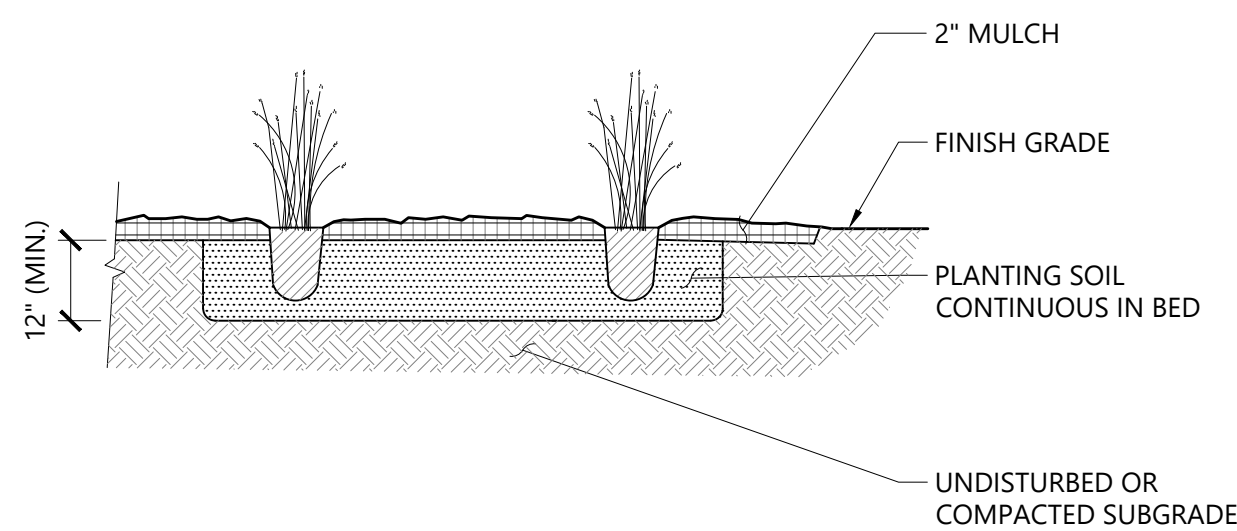
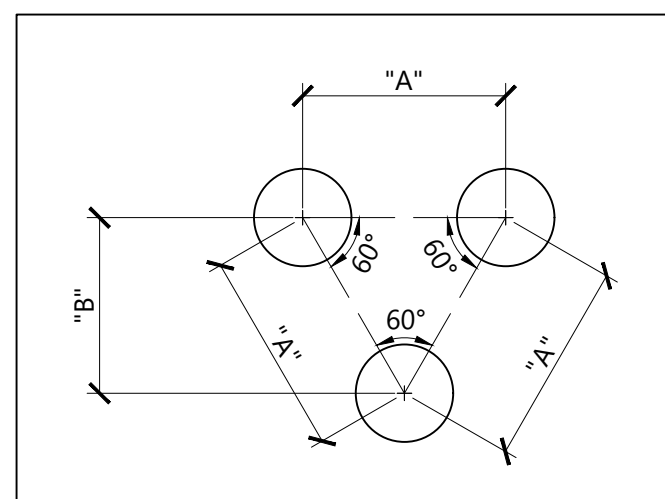


|                                |             |        |
|--------------------------------|-------------|--------|
| <b>Evergreen Tree Planting</b> |             | 9/21   |
| N.T.S.                         | Source: VHB | LD_604 |

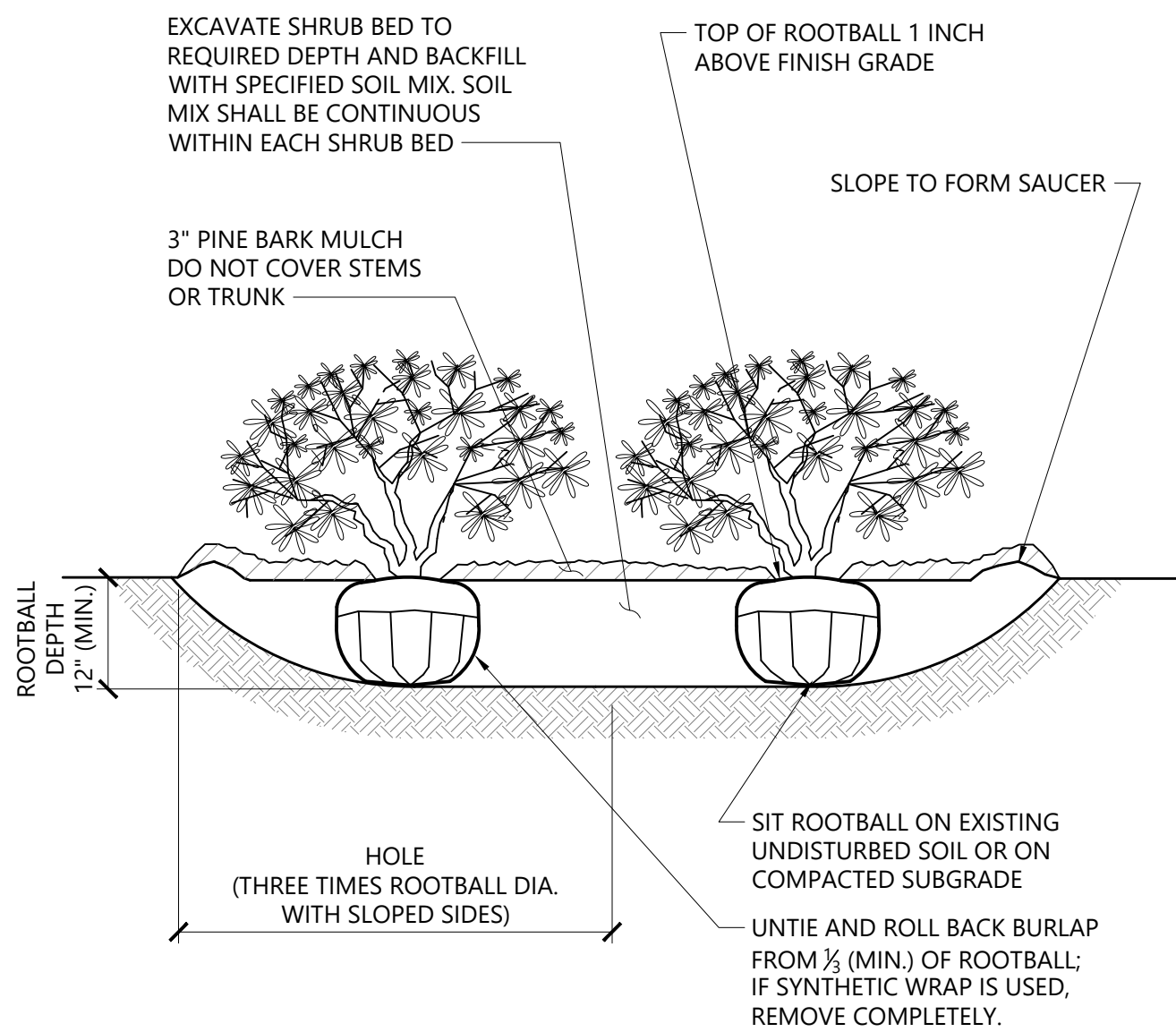


|                                                   |             |        |
|---------------------------------------------------|-------------|--------|
| <b>Tree Planting (For Trees Under 4" Caliper)</b> |             | 9/21   |
| N.T.S.                                            | Source: VHB | LD_602 |

| PLANT SPACING      |                  |
|--------------------|------------------|
| PLANT SPACING("A") | ROW SPACING("B") |
| 6 IN. O.C.         | 5 IN. O.C.       |
| 8 IN. O.C.         | 7 IN. O.C.       |
| 10 IN. O.C.        | 8 ½ IN. O.C.     |
| 12 IN. O.C.        | 10 ½ IN. O.C.    |
| 15 IN. O.C.        | 13 IN. O.C.      |
| 18 IN. O.C.        | 16 IN. O.C.      |
| 24 IN. O.C.        | 21 IN. O.C.      |
| 30 IN. O.C.        | 26 IN. O.C.      |
| 36 IN. O.C.        | 30 IN. O.C.      |
| 48 IN. O.C.        | 42 IN. O.C.      |
| 54 IN. O.C.        | 48 IN. O.C.      |
| 60 IN. O.C.        | 54 IN. O.C.      |



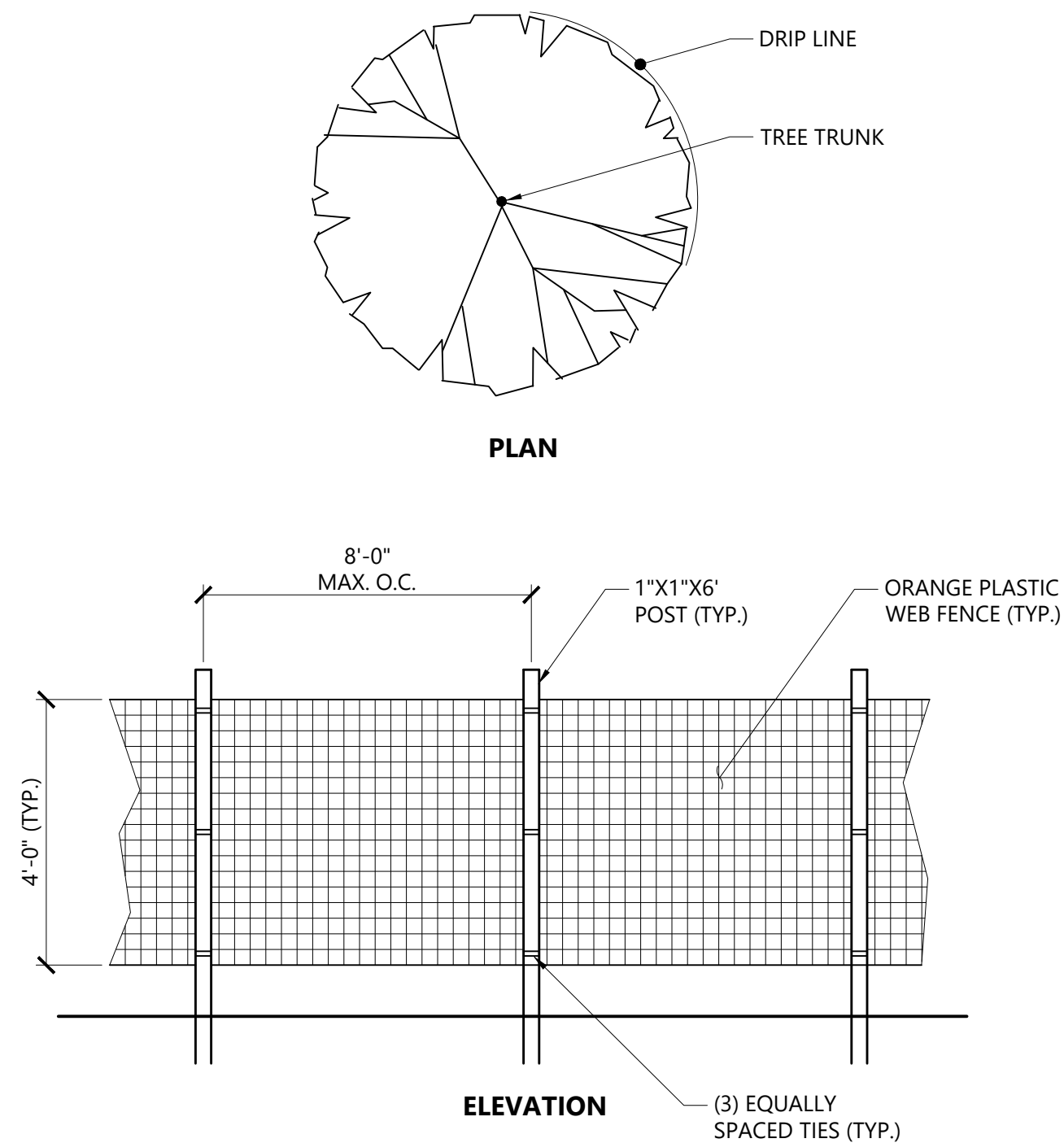
|                                                |             |        |
|------------------------------------------------|-------------|--------|
| <b>Perennial and Ornamental Grass Planting</b> |             | 1/16   |
| N.T.S.                                         | Source: VHB | LD_618 |



## NOTES

1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.

|                           |             |        |
|---------------------------|-------------|--------|
| <b>Shrub Bed Planting</b> |             | 1/16   |
| N.T.S.                    | Source: VHB | LD_601 |



## NOTES

1. INSTALL TREE PROTECTION FENCE AT THE DRIVE LINE OF EXISTING TREES TO REMAIN.

**Tree Protection Fence** 1/16  
 N.T.S. Source: VHB LD\_610



**174 Hanover Street Extension  
Lebanon, New Hampshire 03766**

[illegible]

|             |            |
|-------------|------------|
| Designed by | Checked by |
| EJB         |            |

Permitting May 10, 2024

Not Approved for Construction

## Landscape Details

Drawing Number



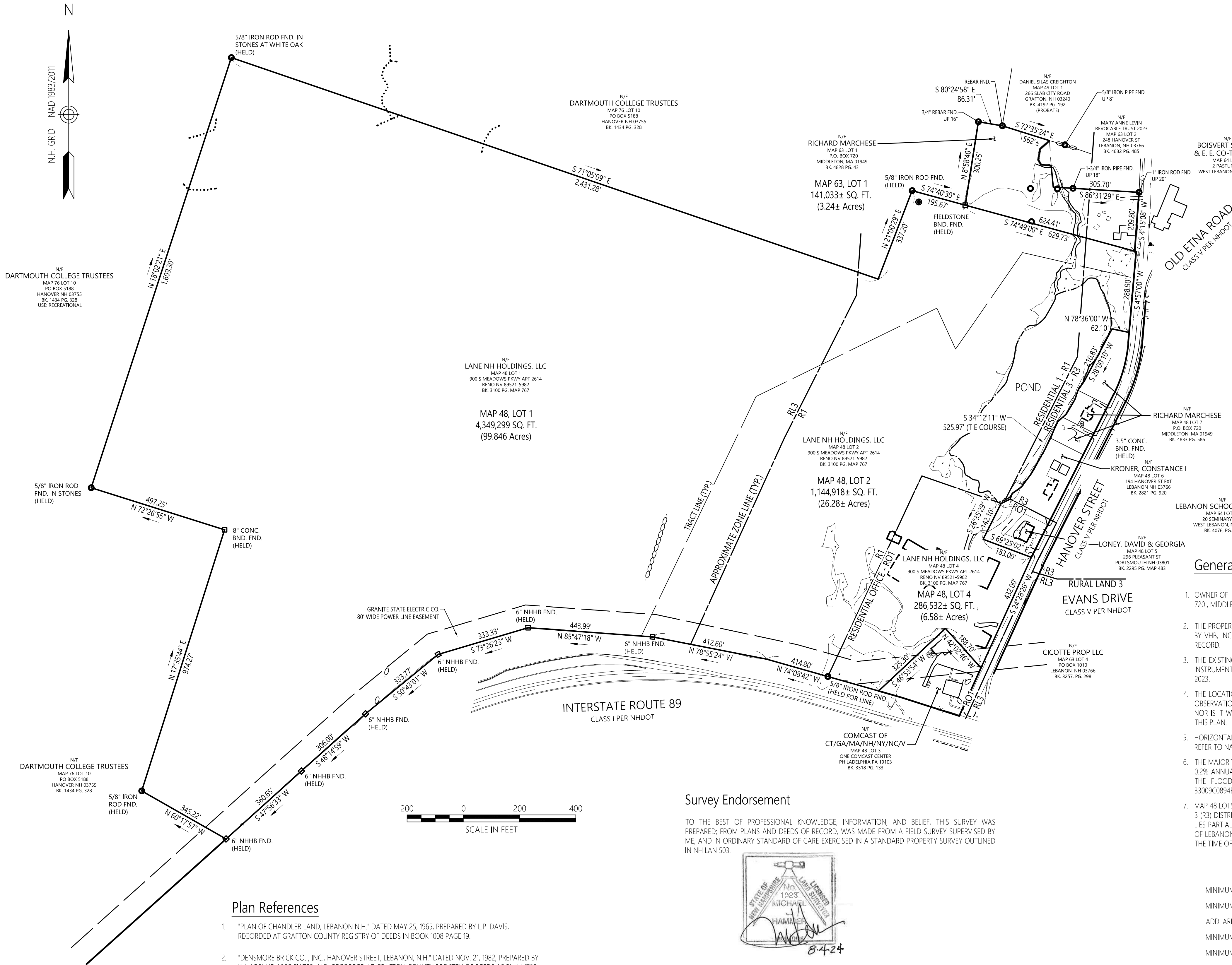
## L2.1

Sheet 40 of 50

08/06/2024

Project Number  
52933.00





Plan References

- "PLAN OF CHANDLER LAND, LEBANON N.H." DATED MAY 25, 1965, PREPARED BY L.P. DAVIS, RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS IN BOOK 1008 PAGE 19.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 1700.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, REVISED OCT. 4, 1983, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 2089.
- "DENSMORE BRICK CO., INC., HANOVER STREET, LEBANON, N.H." DATED NOV. 21, 1982, REVISED APRIL 24, 1984, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 2934.
- "HODGES DEVELOPMENT CORP., HANOVER STREET, GRAFTON COUNTY, LEBANON, N.H." DATED APRIL 4, 1986, REVISED THROUGH 5/4/89, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 5625.
- "ELBTHAL REALTY TRUST, LEBANON, N.H." DATED JULY 3, 1980, PREPARED BY K.A. LECLAIR ASSOCIATES, INC., RECORDED AT GRAFTON COUNTY REGISTRY OF DEEDS AS PLAN 6453.
- "STATE OF NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS, PLANS OF PROPOSED FEDERAL AID PROJECT, I 89-1(4)5(3), N.H. PROJECT NO. P-3821-B" UNDATED, ON FILE WITH NHDOT AS PLAN P5821.B.

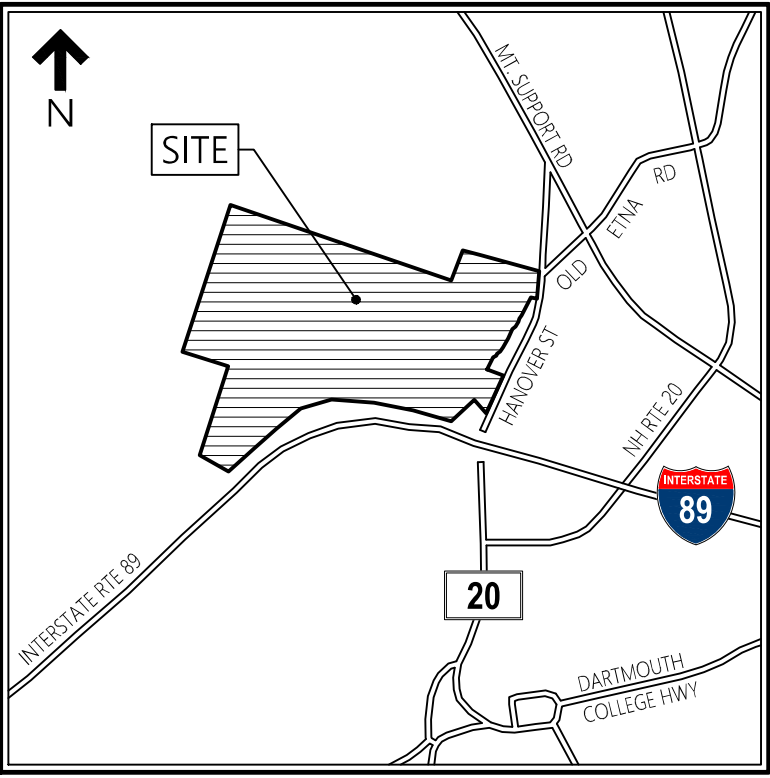
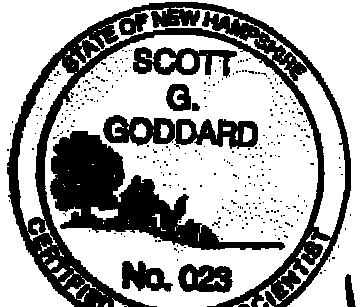
Survey Endorsement

TO THE BEST OF PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THIS SURVEY WAS PREPARED; FROM PLANS AND DEEDS OF RECORD, WAS MADE FROM A FIELD SURVEY SUPERVISED BY ME, AND IN ORDINARY STANDARD OF CARE EXERCISED IN A STANDARD PROPERTY SURVEY OUTLINED IN NH LAN 503.



Wetland Endorsement

THIS IS TO CERTIFY THAT THE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (TECHNICAL REPORT Y-87-1)



Locus Map  
(NOT TO SCALE)

Legend

- ① DRAIN MANHOLE
- ② CATCH BASIN
- ③ SEWER MANHOLE
- ④ ELECTRIC MANHOLE
- ⑤ TELEPHONE MANHOLE
- ⑥ MANHOLE
- ⑦ HAND HOLE
- ⑧ WATER GATE
- ⑨ FIRE HYDRANT
- ⑩ GAS GATE
- ⑪ BOLLARD
- ⑫ STREET SIGN
- ⑬ LIGHT POLE
- ⑭ UTILITY POLE
- ⑮ GUY POLE
- ⑯ GUY WIRE
- ⑰ MONITORING WELL
- ⑱ FLOOD LIGHT
- ⑲ PEDESTRIAN SIGNAL
- ⑳ MAST ARM
- ㉑ FLASHING SIGNAL
- ㉒ WELL
- ㉓ MARSH
- ㉔ F.F.E. = 45.27'
- ㉕ FINISHED FLOOR ELEVATION
- ㉖ DASHED WHITE LINE
- ㉗ EDGE OF PAVEMENT
- ㉘ VERTICAL GRANITE CURB
- ㉙ SLOPED GRANITE EDGE
- ㉚ GUARD RAIL
- ㉛ CHAIN LINK FENCE
- ㉜ DRAINAGE LINE
- ㉝ SEWER LINE
- ㉞ OVERHEAD WIRE
- ㉟ UNDERGROUND ELECTRIC
- ㊱ TELEPHONE LINE
- ㊲ GAS LINE
- ㊳ WATER LINE
- ㊴ STONE WALL
- ㊵ TREE LINE
- ㊶ LIMIT OF BANK
- ㊷ VEGETATED WETLAND BOUNDARY

General Notes

- OWNER OF RECORD OF TAX MAP 48 LOTS 1, 2, AND 4 IS BRICKYARD ONE NOMINEE TRUST, P.O. BOX 720, MIDDLETON, MASSACHUSETTS 01949, GCRD BOOK 4865 PAGE 128.
- THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN SEPTEMBER AND OCTOBER OF 2022, APRIL 2023, AND FROM DEEDS AND PLANS OF RECORD.
- THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. FROM SEPTEMBER THRU NOVEMBER, 2022, AND APRIL 2023.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
- HORIZONTAL DATUM IS BASED ON NH GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD OF 1988.
- THE MAJORITY OF MAP 48, LOTS 1, 2 & 4 LIES WITHIN ZONE X (UNSHADED) (AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) WITH THE EXCEPTION OF THE POND (ZONE A) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR GRAFTON COUNTY, NEW HAMPSHIRE, MAP NUMBER 33009C0894E, EFFECTIVE DATE FEBRUARY 20, 2008.
- MAP 48 LOTS 1 & 2 LIE PARTIALLY WITHIN THE RURAL LAND 3 (RL3), RESIDENTIAL 1 (R1) AND RESIDENTIAL 3 (R3) DISTRICTS, MAP 48 LOT 4 LIES ENTIRELY WITHIN THE RESIDENTIAL OFFICE 1 (RO1), MAP 63 LOT 1 LIES PARTIALLY IN THE R1 AND R3 DISTRICTS AS SHOWN ON THE "OFFICIAL ZONING MAP OF THE CITY OF LEBANON, NH", DATED JUNE 1, 2020. DIMENSIONAL REQUIREMENTS FOR THE ZONING DISTRICTS AT THE TIME OF THIS SURVEY ARE:

|                              | RL3    | R1 & RO1  | R1 & RO1  | R1 & RO1  |
|------------------------------|--------|-----------|-----------|-----------|
|                              |        | (CLASS 1) | (CLASS 2) | (CLASS 3) |
| MINIMUM LOT AREA             | 10 AC. | 10K SF    | 15K SF    | 40K SF    |
| MINIMUM LOT WIDTH            | N/A    | 75 FT     | 75 FT     | 100 FT    |
| ADD. AREA PER D.U. AFTER TWO | N/A    | 3K SF     | 5K SF     | 15K SF    |
| MINIMUM FRONT YARD SETBACK   | 50 FT  | 20 FT     | 20 FT     | 25 FT     |
| MINIMUM SIDE YARD SETBACK    | 50 FT  | 15 FT     | 15 FT     | 25 FT     |
| MINIMUM REAR YARD SETBACK    | 50 FT  | 20 FT     | 20 FT     | 30 FT     |
| MAXIMUM BUILDING HEIGHT      | 35 FT  | 45 FT*    | 45 FT*    | 45 FT*    |
| MAXIMUM BUILDING COVERAGE    | 1%     | 25%       | 20%       | 15%       |

\* WITHIN THE R1 DISTRICT, THE BUILDING HEIGHT MAY BE INCREASED TO 55 FT TO ACCOMMODATE A PARKING STRUCTURE UNDERNEATH OR WITHIN THE PROPOSED BUILDING (SEE SECTION 308.4).

- THE WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY GODDARD CONSULTING, LLC AND LOCATED IN NOVEMBER 2022.
- THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.
- FOOT TRAILS WERE OBSERVED CROSSING THE NORTH AND WEST LOT LINES AS SHOWN. NO DOCUMENTS WERE FOUND AT THE GCRD PROVIDING RIGHTS OF ACCESS OR USE.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

The Brickyard

Hanover Street  
Lebanon, Grafton County, N.H.

| No. | Revision                    | Date      | Apprvd. |
|-----|-----------------------------|-----------|---------|
| 1   | RESPONSE TO COMMENTS UPDATE | 8/06/2024 | MJH     |

|             |            |
|-------------|------------|
| Designed by | Checked by |
| Issued for  | Date       |

April 1, 2024

Boundary  
Plan of Land

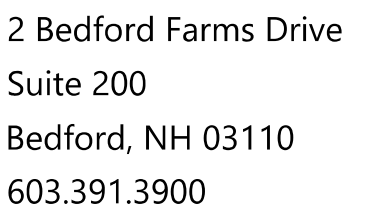
Drawing Number

Sv-1

Sheet 41 of 50

Project Number  
52933.00





- ① DRAIN MANHOLE
- ② CATCH BASIN
- ③ SEWER MANHOLE
- ④ ELECTRIC MANHOLE
- ⑤ TELEPHONE MANHOLE
- ⑥ MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD
- STREET SIGN
- ★ LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- PD PEDESTRIAN SIGNAL
- M MAST ARM
- FLASHING SIGNAL
- W WELL
- W MARSH

|      |       |                            |
|------|-------|----------------------------|
| OP   | DW    | DASHED WHITE LINE          |
| VOC  |       | EDGE OF PAVEMENT           |
| SGE  |       | VERTICAL GRANITE CURB      |
|      |       | SLOPED GRANITE EDGE        |
|      |       | GUARD RAIL                 |
|      |       | CHAIN LINK FENCE           |
|      |       | DRAINAGE LINE              |
|      |       | SEWER LINE                 |
| -OHW |       | OVERHEAD WIRE              |
| -E   |       | UNDERGROUND ELECTRIC       |
|      | T     | TELEPHONE LINE             |
| -G   |       | GAS LINE                   |
| -W   |       | WATER LINE                 |
|      |       | STONE WALL                 |
|      |       | TREE LINE                  |
|      |       | LIMIT OF BANK              |
|      | WF100 | VEGETATED WETLAND BOUNDARY |

|             |            |
|-------------|------------|
| Designed by | Checked by |
| Issued for  | Date       |

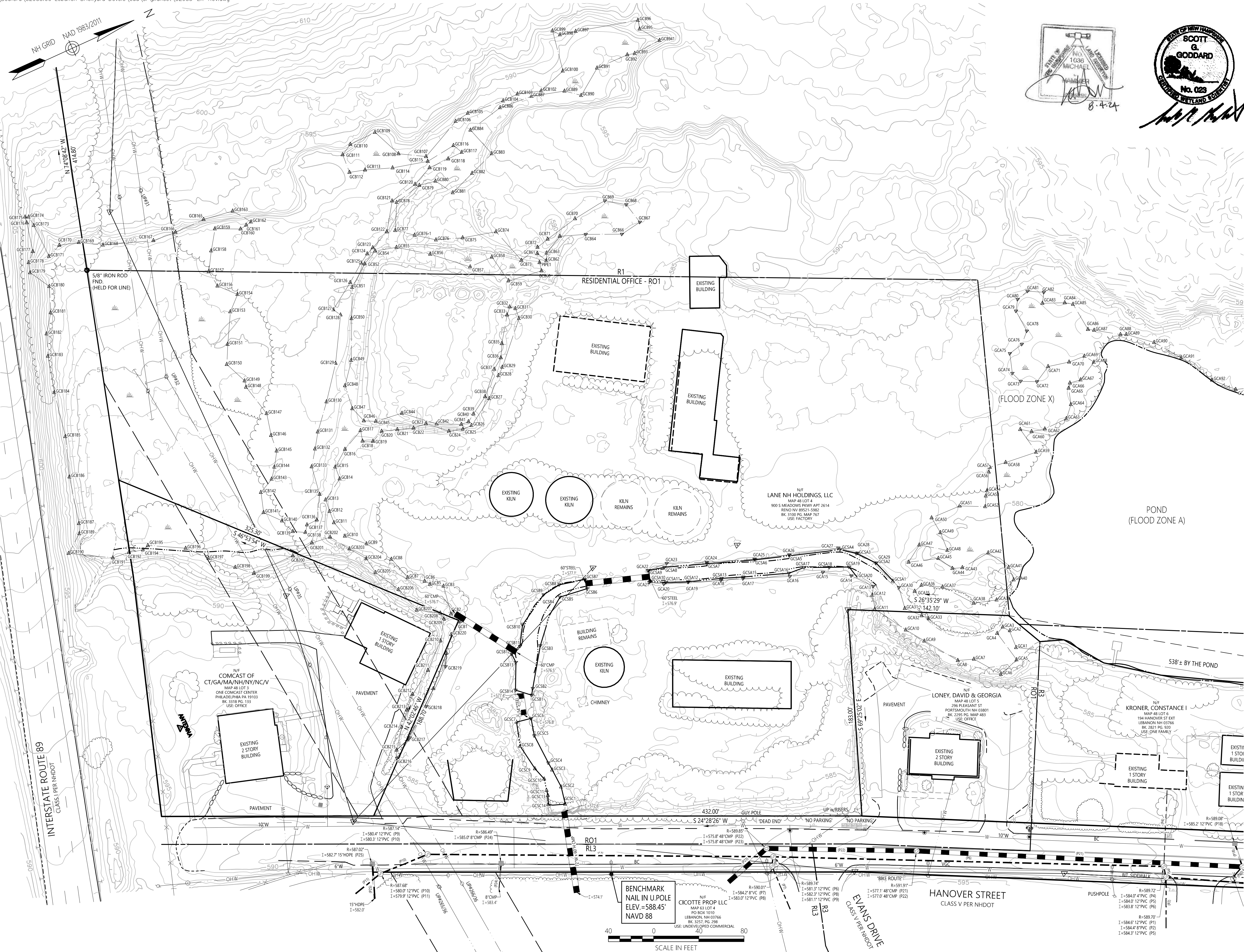
**April 1, 2024**

**Sv-2**

Sheet 42 of 50

Project Number  
**52933.00**

Page 54 of 609







2 Bedford Farms Drive  
Suite 200  
Bedford, NH 03110  
603.391.3900

Legend

- ① DRAIN MANHOLE
- ② CATCH BASIN
- ③ SEWER MANHOLE
- ④ ELECTRIC MANHOLE
- ⑤ TELEPHONE MANHOLE
- ⑥ MANHOLE
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- ㉔ F.F.E.=45.27'
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- ㉘ EDGE OF PAVEMENT
- ㉙ SLOPED GRANITE CURB
- ㉚ SLOPED GRANITE EDGE
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- ㊳ GAS LINE
- ㊴ WATER LINE
- ㊵ STONE WALL
- ㊶ TREE LINE
- ㊷ LIMIT OF BANK
- ㊸ VEGETATED WETLAND BOUNDARY

The Brickyard

Hanover Street  
Lebanon, Grafton County, N.H.

| No. | Revision                    | Date      | Appvd. |
|-----|-----------------------------|-----------|--------|
| 1   | RESPONSE TO COMMENTS UPDATE | 8/06/2024 | MJH    |

|             |            |
|-------------|------------|
| Designed by | Checked by |
| Issued for  | Date       |

April 1, 2024

Drawing Title  
**Existing Conditions  
Plan of Land**

Drawing Number

Sv-3

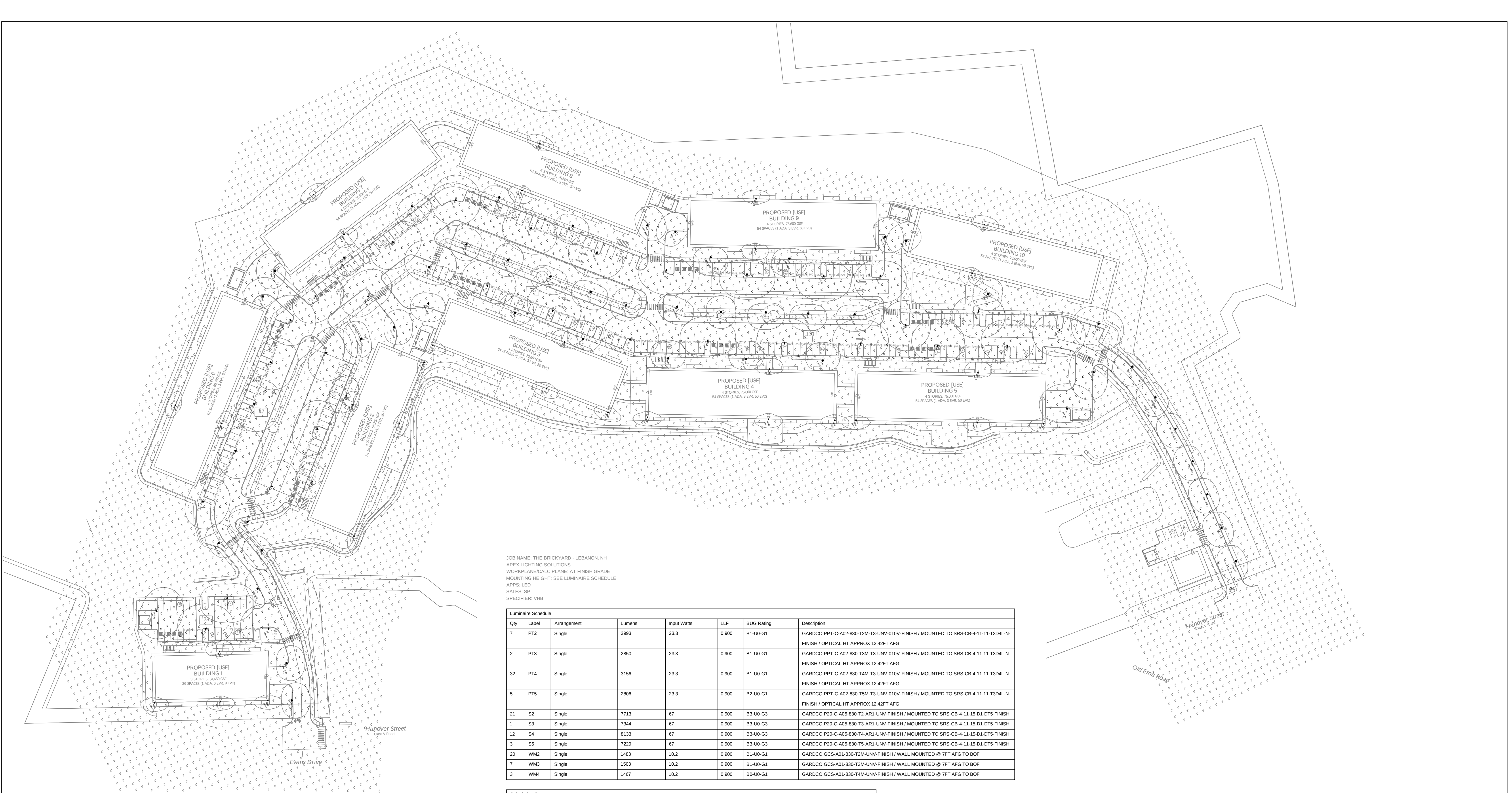
Sheet 43 of 50

Project Number  
52933.00



See Sheet Sv-2





JOB NAME: THE BRICKYARD - LEBANON, NH  
APEX LIGHTING SOLUTIONS  
WORKPLANE/CALC PLANE: AT FINISH GRADE  
MOUNTING HEIGHT: SEE LUMINAIRE SCHEDULE  
APPS: LED  
SALES: SP  
SPECIFIER: VHB

| Luminaire Schedule |       |             |        |             |       |            |                                                                                                                        |
|--------------------|-------|-------------|--------|-------------|-------|------------|------------------------------------------------------------------------------------------------------------------------|
| Qty                | Label | Arrangement | Lumens | Input Watts | LLF   | BUG Rating | Description                                                                                                            |
| 7                  | PT2   | Single      | 2993   | 23.3        | 0.900 | B1-U0-G1   | GARDCO PPT-C-A02-830-T2M-T3-UNV-010V-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 12.42FT AFG |
| 2                  | PT3   | Single      | 2850   | 23.3        | 0.900 | B1-U0-G1   | GARDCO PPT-C-A02-830-T3M-T3-UNV-010V-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 12.42FT AFG |
| 32                 | PT4   | Single      | 3156   | 23.3        | 0.900 | B1-U0-G1   | GARDCO PPT-C-A02-830-T4M-T3-UNV-010V-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 12.42FT AFG |
| 5                  | PT5   | Single      | 2806   | 23.3        | 0.900 | B2-U0-G1   | GARDCO PPT-C-A02-830-T5M-T3-UNV-010V-FINISH / MOUNTED TO SRS-CB-4-11-11-T3D4L-N-FINISH / OPTICAL HT APPROX 12.42FT AFG |
| 21                 | S2    | Single      | 7713   | 67          | 0.900 | B3-U0-G3   | GARDCO P20-C-A05-830-T2-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH                                       |
| 1                  | S3    | Single      | 7344   | 67          | 0.900 | B3-U0-G3   | GARDCO P20-C-A05-830-T3-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH                                       |
| 12                 | S4    | Single      | 8133   | 67          | 0.900 | B3-U0-G3   | GARDCO P20-C-A05-830-T4-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH                                       |
| 3                  | S5    | Single      | 7229   | 67          | 0.900 | B3-U0-G3   | GARDCO P20-C-A05-830-T5-AR1-UNV-FINISH / MOUNTED TO SRS-CB-4-11-15-D1-DT5-FINISH                                       |
| 20                 | WM2   | Single      | 1483   | 10.2        | 0.900 | B1-U0-G1   | GARDCO GCS-A01-830-T2M-UNV-FINISH / WALL MOUNTED @ 7FT AFG TO BOF                                                      |
| 7                  | WM3   | Single      | 1503   | 10.2        | 0.900 | B1-U0-G1   | GARDCO GCS-A01-830-T3M-UNV-FINISH / WALL MOUNTED @ 7FT AFG TO BOF                                                      |
| 3                  | WM4   | Single      | 1467   | 10.2        | 0.900 | B0-U0-G1   | GARDCO GCS-A01-830-T4M-UNV-FINISH / WALL MOUNTED @ 7FT AFG TO BOF                                                      |

| Calculation Summary |             |      |     |     |         |         |
|---------------------|-------------|------|-----|-----|---------|---------|
| Label               | Grid Height | Avg  | Max | Min | Avg/Min | Max/Min |
| BLDG ENTRY DRIVES   | 0           | 1.50 | 3.1 | 0.3 | 5.00    | 10.33   |
| PARKING LOTS        | 0           | 1.59 | 3.5 | 0.4 | 3.98    | 8.75    |
| SIDEWALKS           | 0           | 1.00 | 3.6 | 0.1 | 10.00   | 36.00   |
| SITE                | 0           | 0.48 | 4.6 | 0.0 | N.A.    | N.A.    |
| SITE ENTRY DRIVES   | 0           | 1.27 | 3.1 | 0.1 | 12.70   | 31.00   |

GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice. Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

\* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results. For proper comparison of photometric layouts, it is essential that you insist all designers use correct Light Loss Factors.



20-30 BEAVER ROAD, WETHERSFIELD, CT 06109  
TELEPHONE 860.632.8766 / WWW.APEXLTG.COM

PROJECT TITLE:

THE BRICKYARD  
LEBANON, NH

DRAWING TITLE:

SITE LIGHTING  
PHOTOMETRIC CALCULATION

SCALE : 1"=60'-0"

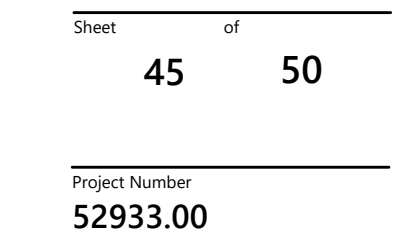
DATE: 7/18/24

DRAWN BY: LED

SHEET:

SL-1C



[illegible][illegible][illegible]

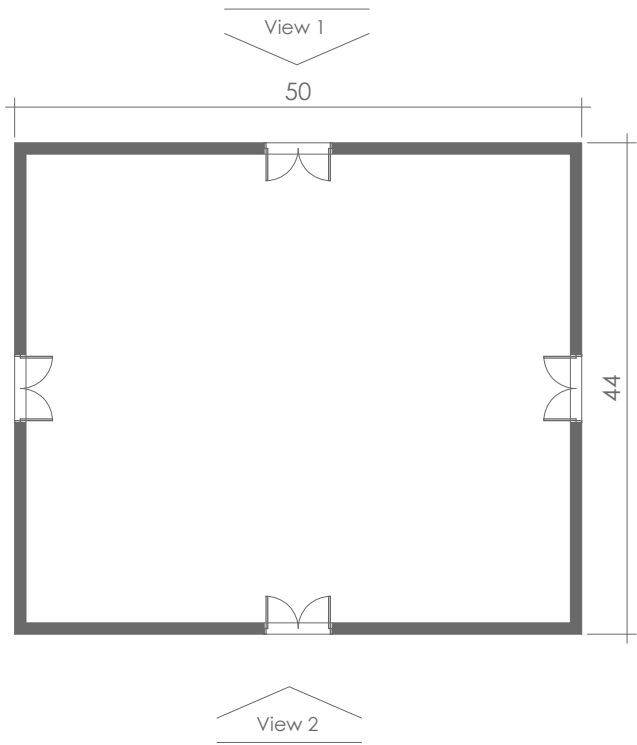


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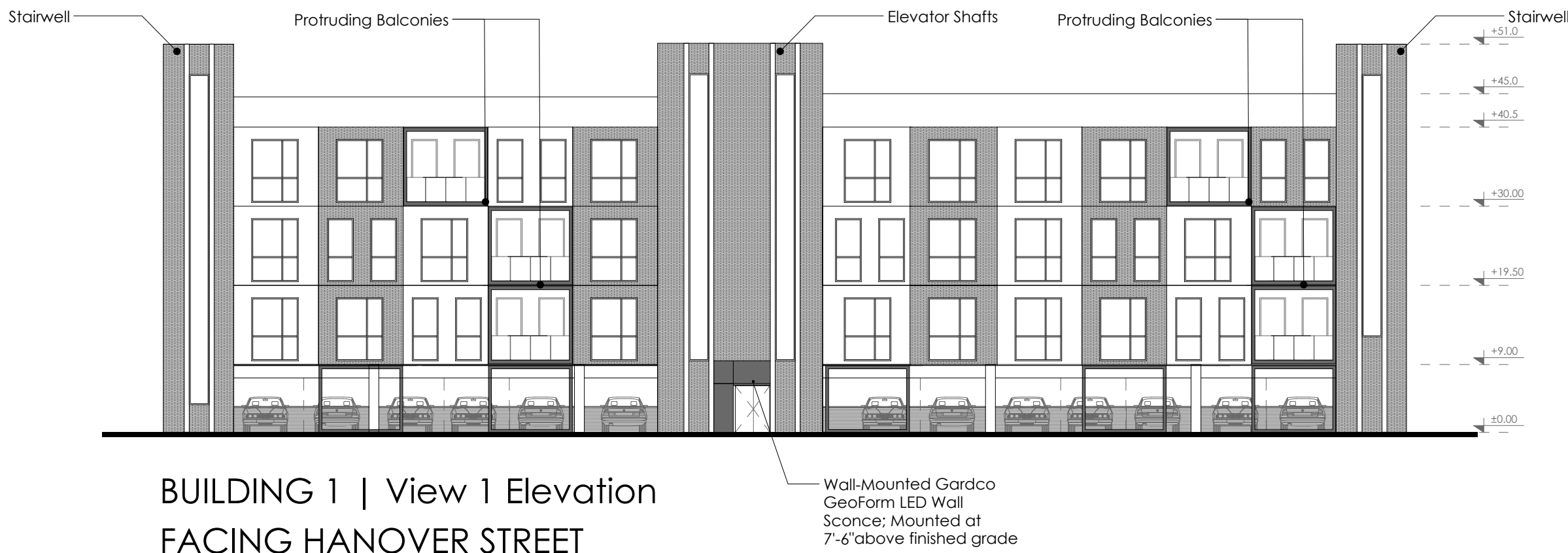
Please note that the plans and elevations are design intent only. The architectural details shown for illustrative purposes and refinements may be necessary as the design phase progresses.



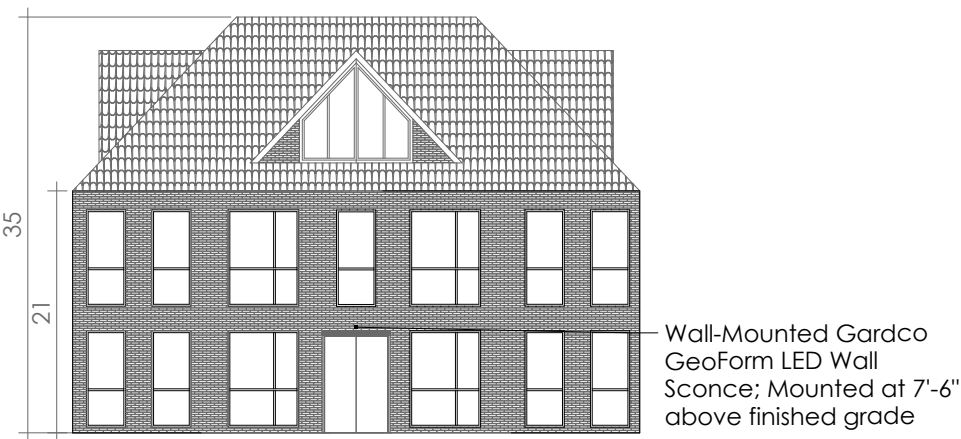
BUILDING 1 | Parking Level Plan



MAINTENANCE BUILDING | GROUND FLOOR PLAN



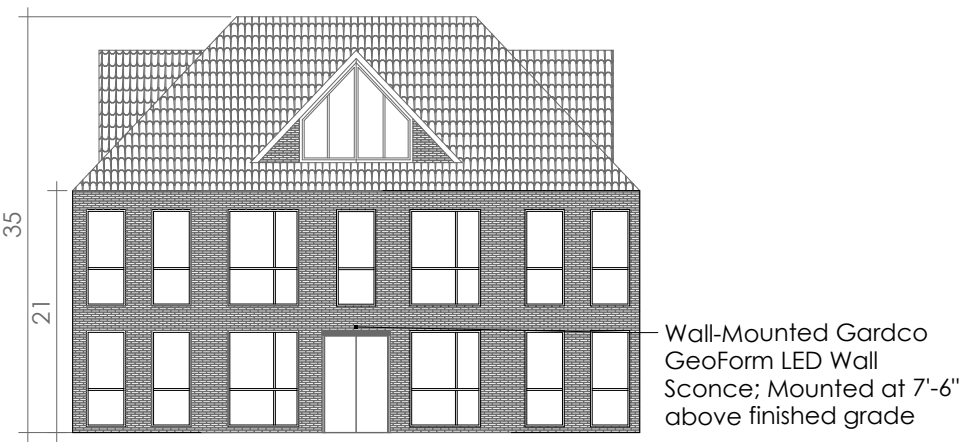
BUILDING 1 | View 1 Elevation  
FACING HANOVER STREET



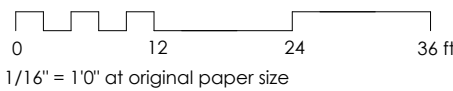
MAINTENANCE BUILDING | View 1 Elevation



BUILDING 1 | View 2 Elevation  
SURFACE PARKING AREA



MAINTENANCE BUILDING | View 2 Elevation



Sheet of  
46 50

|    |            |    |          |
|----|------------|----|----------|
| P3 | Submission | VT | 24/08/02 |
| P2 | Submission | SS | 24/08/02 |
| P1 | Submission | SS | 24/05/07 |



CLIENT

PROJECT  
Lebanon NH

DRAWING STATUS  
PLANNING

DRAWING NAME  
BUILDING 1 & MAINTENANCE BUILDING  
PROPOSED PLAN & ELEVATIONS  
DRAWING NO.  
0089-1201-P3

REV  
P3

DATE  
24/08/02

DRAWN  
SS

SCALE  
1/16" = 1'0" @A1

CHECKED  
VT

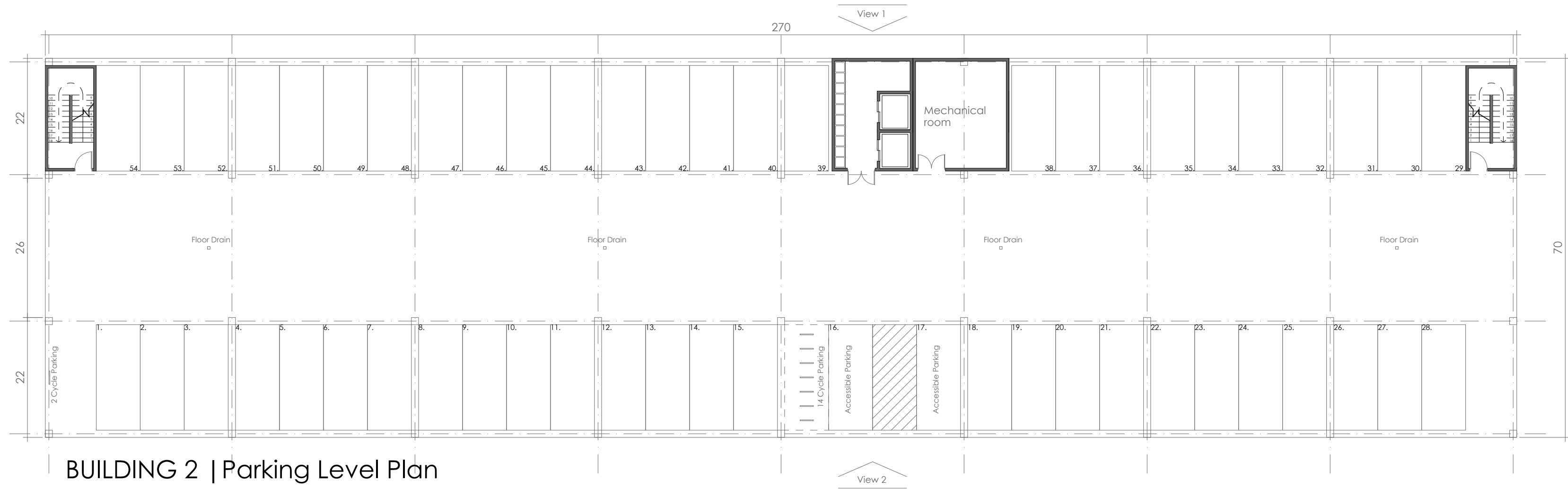
1b, Rustel Road, London, W14 8JA,  
+44 7473601166, www.studiointegrate.co.uk



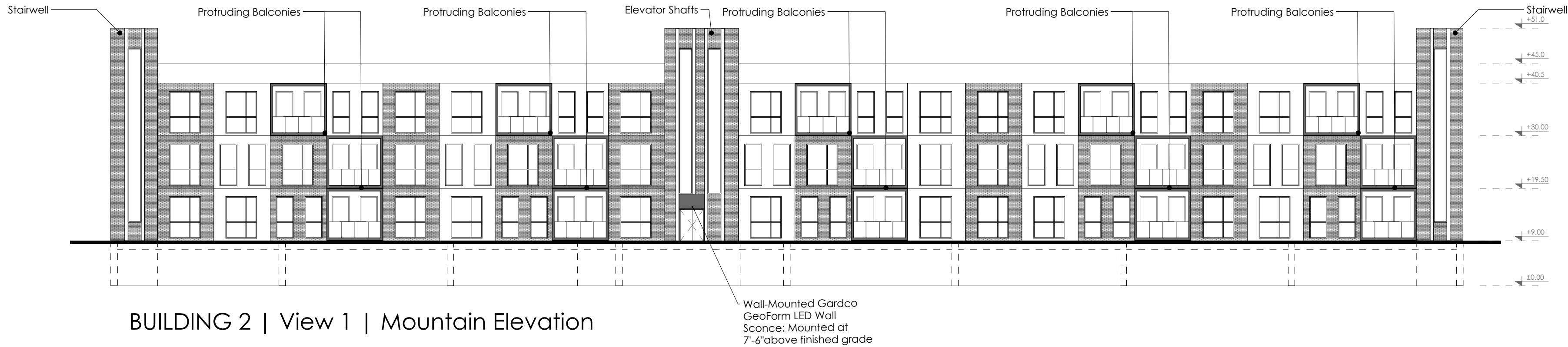
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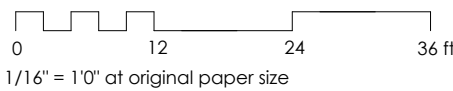
BUILDING 2 | Parking Level Plan



BUILDING 2 | View 1 | Mountain Elevation



BUILDING 2 | View 2 | Lake Elevation



Sheet 47 of 50

|    |            |    |          |
|----|------------|----|----------|
| P3 | Submission | VT | 24/08/02 |
| P2 | Submission | SS | 24/08/02 |
| P1 | Submission | SS | 24/05/07 |



CLIENT

PROJECT  
Lebanon NH

DRAWING STATUS  
PLANNING

DRAWING NAME  
BUILDING 2 | PROPOSED PLAN & ELEVATIONS

DRAWING NO. 0089-1202-F3 REV F3

DATE 24/08/02 DRAWN SS

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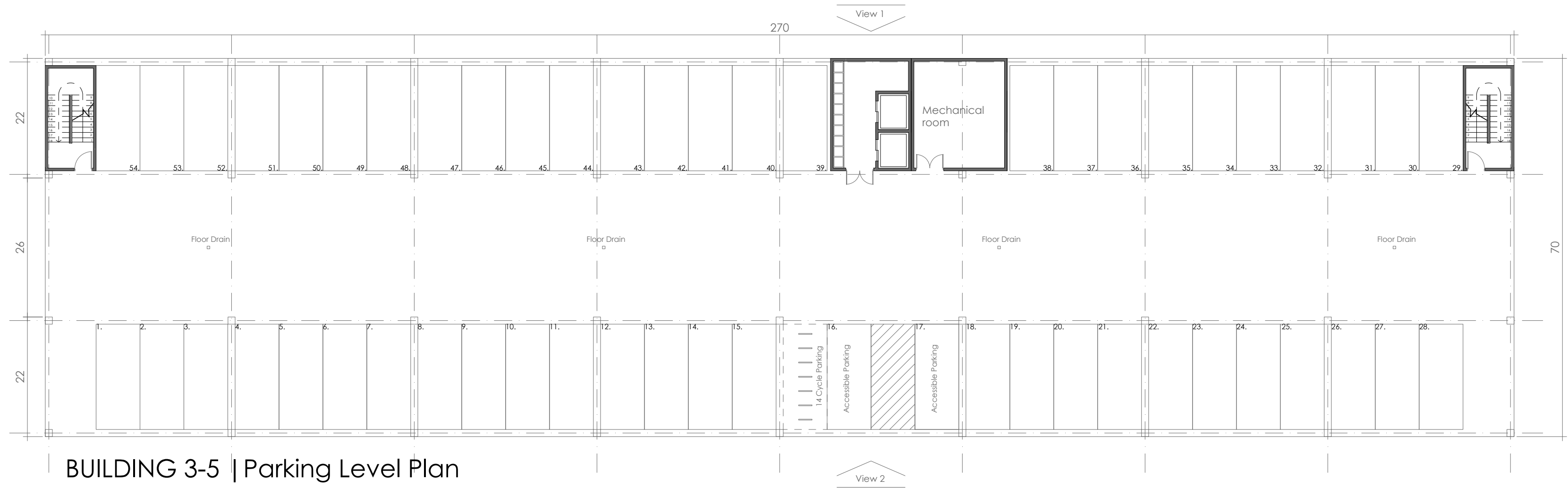
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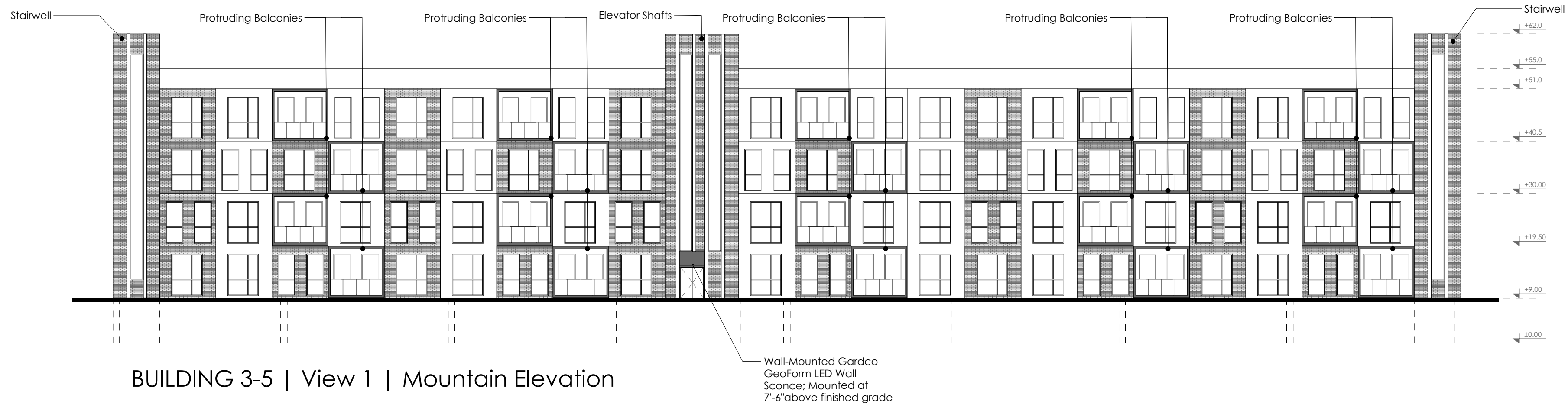
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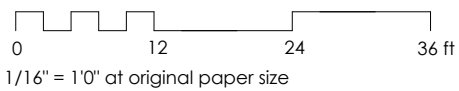
BUILDING 3-5 | Parking Level Plan



BUILDING 3-5 | View 1 | Mountain Elevation



BUILDING 3-5 | View 2 | Lake Elevation



Sheet of  
48 50

| P3  | Submission  | VT  | 24/08/02 |
|-----|-------------|-----|----------|
| P2  | Submission  | SS  | 24/08/02 |
| P1  | Submission  | SS  | 24/05/07 |
| REV | DESCRIPTION | DRN | DATE     |



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PROJECT  
Lebanon NH

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PLANNING

DRAWING NAME  
BUILDING 3-5 | PROPOSED PLAN & ELEVATIONS

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0089-1203-F3 F3

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24/08/02 SS

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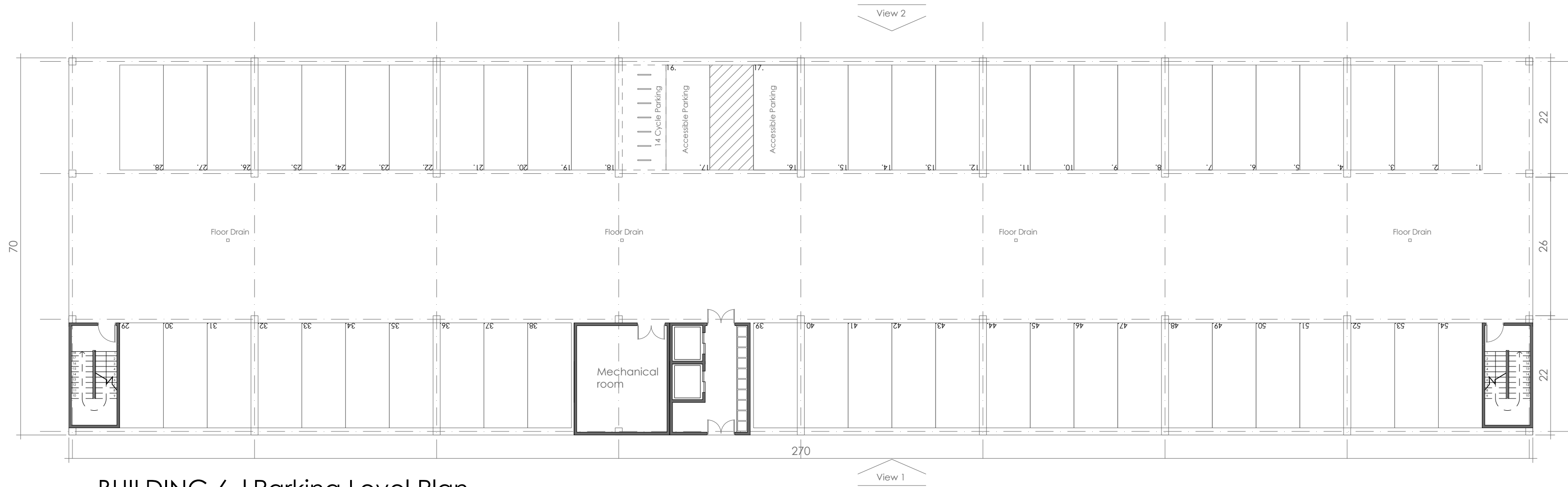
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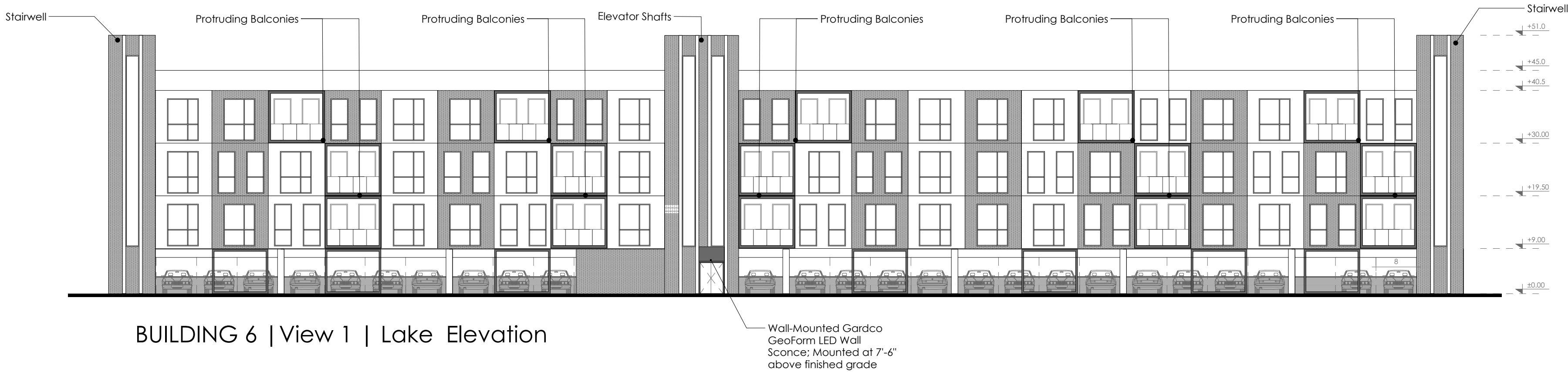
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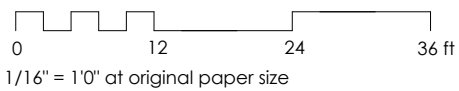
BUILDING 6 | Parking Level Plan



BUILDING 6 | View 1 | Lake Elevation



BUILDING 6 | View 2 | Mountain Elevation



| Sheet |             |     | of       |  |  |
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| 49    |             |     | 50       |  |  |
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| P2    | Submission  | SS  | 24/08/02 |  |  |
| P1    | Submission  | SS  | 24/05/07 |  |  |
| REV   | DESCRIPTION | DRN | DATE     |  |  |



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Lebanon NH

DRAWING STATUS  
PLANNING

DRAWING NAME  
BUILDING 6 | PROPOSED PLAN & ELEVATIONS

|              |     |
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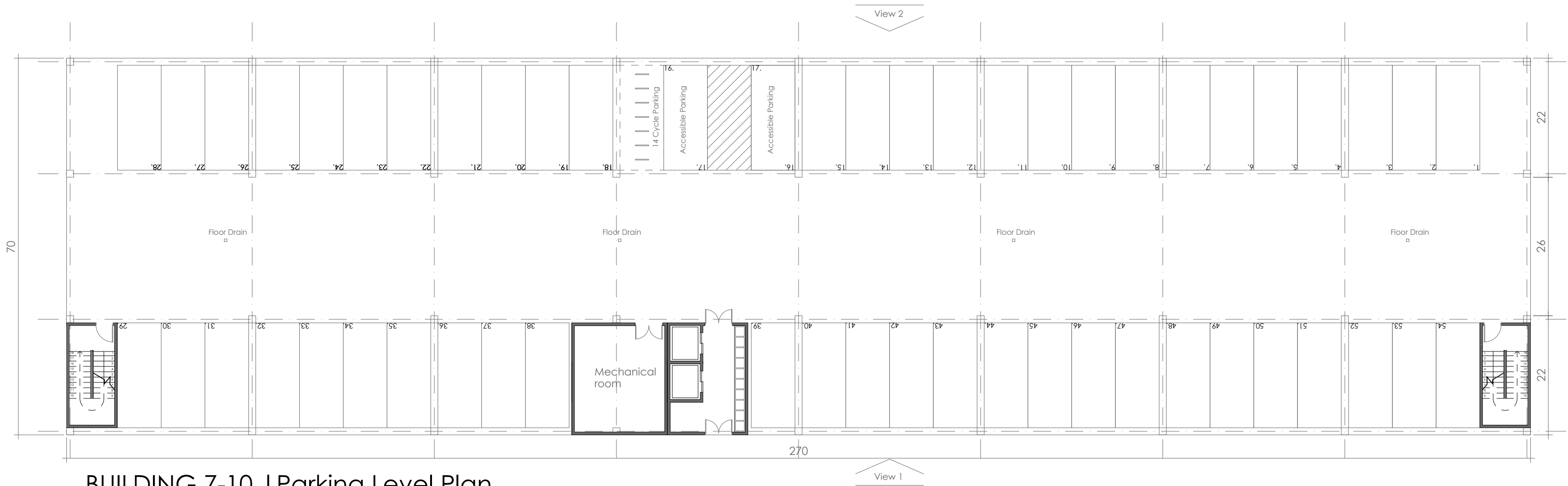
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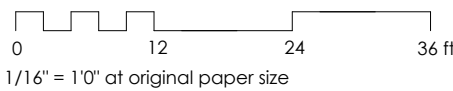
BUILDING 7-10 | Parking Level Plan



BUILDING 7-10 | View 1 | Lake Elevation



BUILDING 7-10 | View 2 | Mountain Elevation



| Sheet |             | of  |          |
|-------|-------------|-----|----------|
| 50    |             | 50  |          |
| P3    | Submission  | VT  | 24/08/02 |
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| P1    | Submission  | SS  | 24/05/07 |
| REV   | DESCRIPTION | DRN | DATE     |



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PROJECT  
Lebanon NH

DRAWING STATUS  
PLANNING

DRAWING NAME  
BUILDING 7-10 | PROPOSED PLAN & ELEVATIONS

DRAWING NO. 0089-1205-P3

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| P3  | P3  |

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# Lebanon Brickyard Development

Lebanon, New Hampshire

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PREPARED FOR

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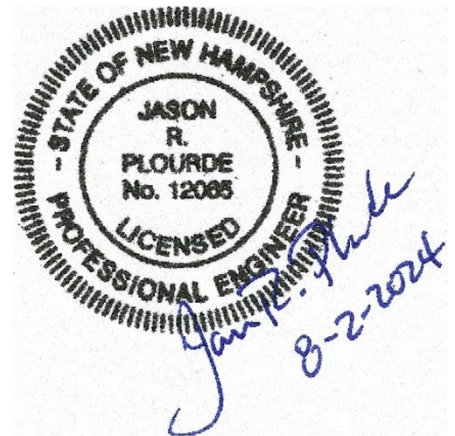
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PREPARED BY



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May 2024 (rev August 2024)





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# 1

## Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this Traffic Impact Study to summarize the anticipated transportation impacts associated with the proposed Lebanon Brickyard residential development to be located along the west side of Hanover Street in Lebanon, New Hampshire. As proposed, the development program consists of constructing 474 apartment units in 10 four-story buildings. In addition, the project is envisioned to replace the residence at 238 Hanover Street with a structure to contain a single-family residence for the property manager of the Lebanon Brickyard development. Access is proposed via two full access driveways along Hanover Street. The northern driveway will be located to the north of Old Etna Road and the southern driveway will be located across from Evans Drive. The site location in relation to the surrounding roadway network is shown in Figure 1.

New Hampshire Department of Transportation (NHDOT) officials are developing improvements for the NH Route 120 corridor between Hanover Street and Etna Road/Old Etna Road.<sup>1</sup> On December 1, 2023, the project team attended a meeting with City of Lebanon, NHDOT, and Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) officials to discuss the scope of this traffic study for the proposed Lebanon Brickyard residential development and the NH Route 120 roadway project. During the

<sup>1</sup> [www.dot.nh.gov/projects-plans-and-programs/project-center/lebanon-29612](https://www.dot.nh.gov/projects-plans-and-programs/project-center/lebanon-29612)



meeting, NHDOT officials stated that an NHDOT permit is not expected to be required for the proposed land development project due to the low traffic increases on the state highway system. Therefore, approval of the proposed residential development with respect to traffic impacts is expected to be required through the local permitting process. This traffic study has been prepared in accordance with the City of Lebanon's Site Plan Regulations (Article V Section 5.1.G.2)<sup>2</sup> and the scope agreed upon at the December 1, 2023 meeting.

*VHB had prepared and submitted a May 2024 Traffic Impact Study that was peer reviewed by Weston & Sampson on behalf of the City of Lebanon. This current version of the Traffic Impact Study has been stamped by a Professional Engineer licensed in the State of New Hampshire and incorporates requested typographical revisions. This version does not change the traffic volumes, methodologies, or findings of the May 2024 Traffic Impact Study.*

---

<sup>2</sup> City of Lebanon, New Hampshire. Site Plan Review Regulations. 23 Jan. 2023.





Site Location Map

Figure 1



0 350 700 Feet





# 2

## Existing Conditions

Existing conditions were developed by conducting field reconnaissance and collecting traffic counts within the vicinity of the site. In preparing this study, the following 'study area' intersections have been analyzed and evaluated:

- › Hanover Street and Evans Drive
- › Hanover Street and Old Etna Road
- › Hanover Street Extension, Heater Road, and Mount Support Road
- › Old Etna Road and Heater Road
- › NH Route 120, Old Etna Road, and Etna Road
- › NH Route 120 and Evans Drive

Within the vicinity of the site, Hanover Street is functionally classified as a Local Roadway, under City of Lebanon jurisdiction, and has a posted speed limit of 25 miles per hour (mph) and a speed limit of 20 mph between 7:00 AM-4:00 PM within the school zone for Hanover Street Elementary School (193 Hanover Street) and Lebanon High School (195 Hanover Street). Directional flows are separated along Hanover Street by double solid line yellow (DSL) centerlines. Land uses consist of residences, Comcast, Hanover Street Elementary School, and Lebanon High School.



There is a sidewalk provided along the east side of Hanover Street starting at Old Etna Road (to the north) that continues over Interstate 89 (I-89) to the south.

## Traffic Volumes

### Traffic Counts

Base traffic conditions at the study area intersections were developed by conducting turning movement counts (TMCs) and vehicle classification counts on Thursday, November 10, 2022, during the weekday AM peak period (7:00-9:00 AM) and the weekday PM peak period (2:00-6:00 PM). In addition, intersection traffic counts were collected on Saturday, November 12, 2022, during the midday peak period (11:00 AM-1:00 PM). These weekday time periods were selected in order to capture the weekday commuting peak periods<sup>3</sup> as well as the student arrival and dismissal periods for Hanover Street Elementary School and Lebanon High School.<sup>4</sup> In addition, automatic traffic recorder (ATR) counts were conducted along Hanover Street and Evans Drive in the vicinity of the site to collect weekday and Saturday daily traffic volumes and vehicle speed measurements. The traffic count data are provided in the Appendix.

An evaluation of the traffic counts revealed that the study area generally experienced a weekday peak between 7:00-8:00 AM and between 4:30-5:30 PM, and a Saturday peak between 11:00 AM-12:00 PM. Along Hanover Street at the unsignalized intersections with Old Etna Road and with Evans Drive, the influence of the elementary and high school dismissal traffic showed that the weekday afternoon peak occurred between 2:15-3:15 PM and between 2:00-3:00 PM, respectively. Therefore, a supplemental evaluation was conducted at these intersections and the proposed site driveways during the school dismissal time period as provided in the Appendix.

### Seasonal Adjustment

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. Based on NHDOT guidelines for the preparation of a traffic study, existing traffic volumes must represent peak-month conditions. Upon review of seasonal adjustment and historical count data provided by NHDOT at the permanent count station located along NH Route 120 south of Lahaye Drive, traffic volumes in the month of November are approximately 13 percent lower than peak-month volumes (October).<sup>5</sup> Therefore, the November 2022 traffic counts at the study area intersections were increased by 13 percent to represent 2022 peak-hour traffic volumes during peak-month conditions. The NHDOT seasonal adjustment data are provided in the Appendix.

---

<sup>3</sup> Weekday commuting peak periods typically occur between 7:00-9:00 AM and 4:00-6:00 PM.

<sup>4</sup> Hanover Street Elementary School: the bell to enter school rang at 8:00 AM and the end of the day bell rang at 3:00 PM. Lebanon High School: Monday-Thursday first bell was at 7:30 AM and the last bell was at 2:35 PM.

<sup>5</sup> New Hampshire Department of Transportation Bureau of Traffic. Year 2019 Monthly Data, Count Station 02253025: Lebanon – NH Route 120 1 mile south of Hanover Town Line (south of Lahaye Drive).



## Pandemic Adjustment

Due to the coronavirus disease 2019 (COVID-19) pandemic, traffic volumes may not represent normal travel conditions along New Hampshire roadways. To determine whether a pandemic adjustment should be made to the 2022 peak-month traffic volumes, NHDOT guidance is to review historical traffic counts from a nearby permanent count station during the month of full data that is nearest to the month of the counts and during that same month prior to the pandemic.<sup>6</sup> Based on this NHDOT methodology, a comparison of the November 2022 and the November 2019 data from the permanent count station located along NH Route 120 south of Lahaye Drive shows that traffic volumes have decreased by 29.7 percent during the weekday AM peak hour, 19.1 percent during the weekday PM peak hour, and 6.2 percent during the Saturday midday peak hour.

While traffic volumes along NH Route 120 were shown to experience large decreases between November 1999 and November 2022, these same reductions may not have been realized on the nearby local roadway system or on the turns to and from local roadways along NH Route 120 (e.g., Evans Drive) which are mostly influenced by school and Dartmouth Health related traffic. To be consistent with NHDOT methodologies, however, the 2022 peak-month traffic volumes were increased by the same pandemic adjustment factors at all study area intersections which then may accordingly reflect an overestimated baseline scenario at the local intersections.<sup>7</sup> The November 2022 and November 2019 traffic volume comparison is provided in the Appendix.

## Existing Traffic Volume Summary

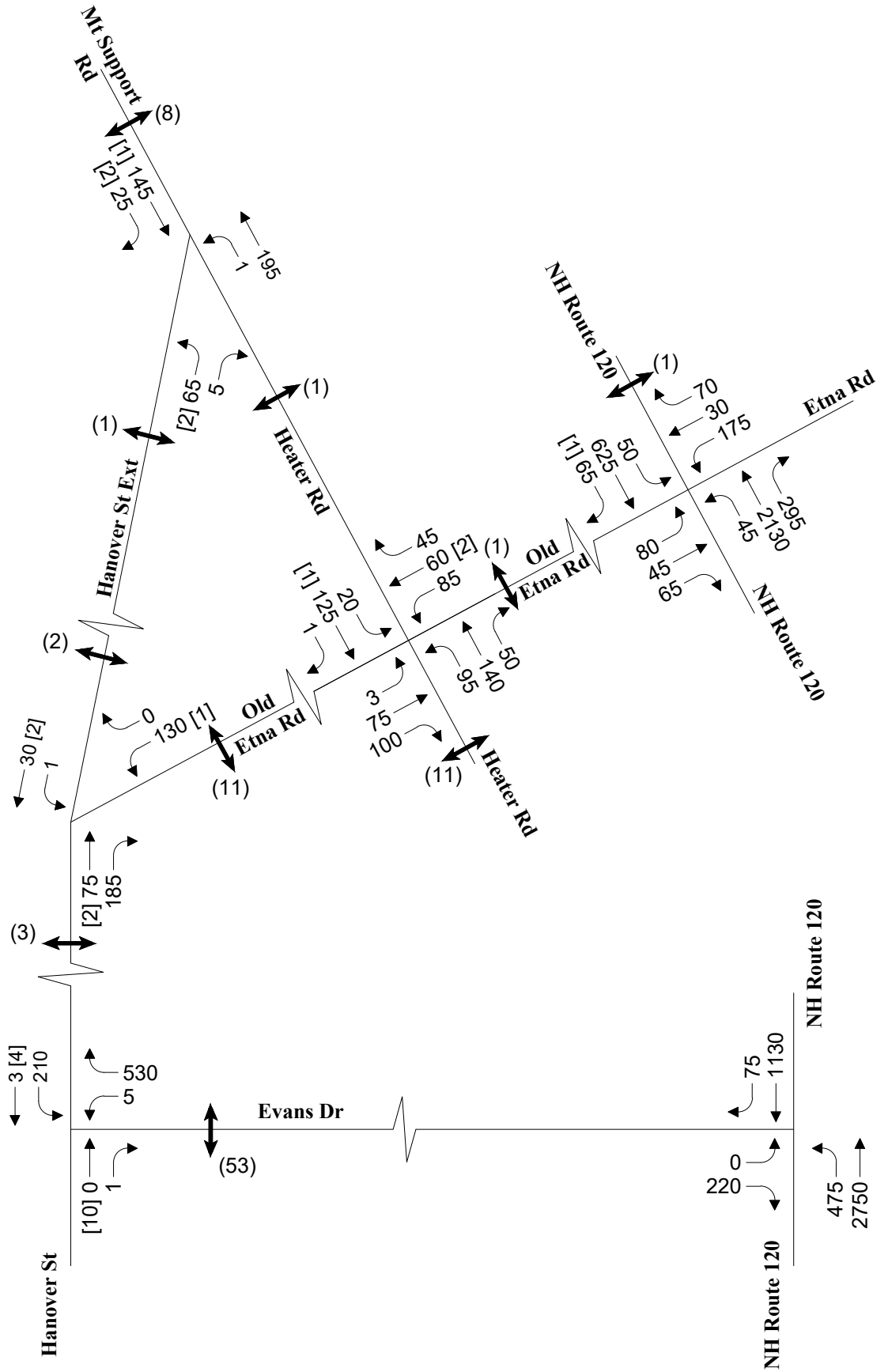
The 2022 Existing weekday AM, weekday PM, and Saturday midday peak hour transportation volumes (vehicles, pedestrians, and bicycles) are reflected on Figures 2, 3, and 4, respectively. Table 1 provides a summary of the vehicular volumes along Hanover Street and Evans Drive in the vicinity of the proposed development.

---

<sup>6</sup> Ibid. 5.

<sup>7</sup> The 2022 peak-month traffic volumes were increased by 1.147 during the weekday daily period, 1.109 during the Saturday daily basis, 1.297 during the weekday AM peak hour, 1.191 during the weekday PM peak hour, and 1.062 during the Saturday midday peak hour.





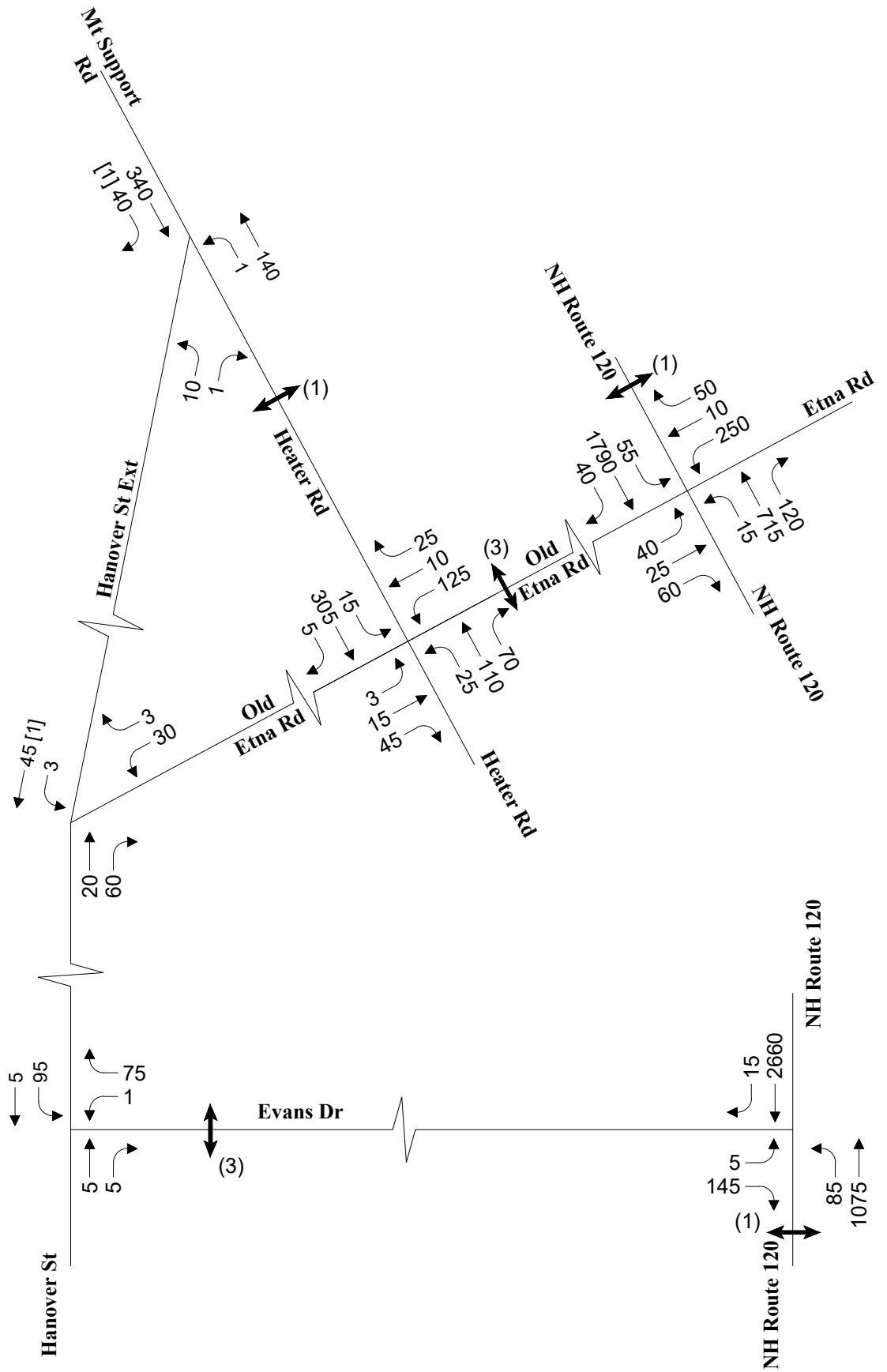
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2022 Existing Weekday Morning  
Peak Hour Traffic Volumes

**Figure 2**





2022 Existing Weekday Evening  
Peak Hour Traffic Volumes

**Figure 3**





### Figure 4



**Table 1 Existing Traffic Volume Summary**

| Location/Time Period                | Daily Traffic Volume (vpd) <sup>a</sup> | Peak Hour Traffic Volume (vph) <sup>b</sup> | K-Factor <sup>c</sup> | Directional Distribution <sup>d</sup> |
|-------------------------------------|-----------------------------------------|---------------------------------------------|-----------------------|---------------------------------------|
| <b>Hanover St north of Evans Dr</b> |                                         |                                             |                       |                                       |
| Weekday Daily                       | 2,550                                   |                                             |                       |                                       |
| Weekday AM Peak Hour                |                                         | 740                                         | 29.0                  | 71% NB                                |
| Weekday PM Peak Hour                |                                         | 180                                         | 7.1                   | 56% SB                                |
| Saturday Daily                      | 670                                     |                                             |                       |                                       |
| Saturday Midday Peak Hour           |                                         | 50                                          | 7.2                   | 60% NB                                |
| <b>Evans Dr east of Hanover St</b>  |                                         |                                             |                       |                                       |
| Weekday Daily                       | 2,655                                   |                                             |                       |                                       |
| Weekday AM Peak Hour                |                                         | 745                                         | 28.1                  | 72% WB                                |
| Weekday PM Peak Hour                |                                         | 176                                         | 6.6                   | 57% EB                                |
| Saturday Daily                      | 610                                     |                                             |                       |                                       |
| Saturday Midday Peak Hour           |                                         | 50                                          | 8.2                   | 58% WB                                |

- a In vehicles per day. Weekday daily traffic counts seasonally increased by 1.13 and pandemically adjusted by 1.147, and Saturday daily traffic counts seasonally increased by 1.13 and pandemically adjusted by 1.109.
- b In vehicles per hour. Weekday AM peak hour traffic counts increased by 1.13 and pandemically adjusted by 1.297, weekday PM peak hour traffic counts seasonally increased 1.13 and pandemically adjusted by 1.191, and Saturday midday peak hour traffic counts increased by 1.13 and pandemically adjusted by 1.062.
- c Percent of average daily traffic occurring during the peak hour.
- d Predominant traffic flow, with NB = northbound, SB = southbound, EB = eastbound, and WB = westbound.

Many rural and urban roadways experience a K-factor that falls between 9.0 and 10.0 for the weekday commuting time periods. The K-factor may exceed 10.0 for roadways with heavy peak traffic demand.<sup>8</sup> As shown in Table 1, the K-factor for the weekday AM peak hour is greater than the typical range along rural and urban roadways during the weekday commuting peak hours (28.1 and 29.0 vs. 9.0-10.0), which suggests that these sections of Hanover Street and Evans Drive carried traffic volumes with strong peak demands (i.e., a heavy traffic flow) during the weekday AM time period. These heavier weekday AM traffic volumes coincide with both the commuter peak and the student arrival periods for the nearby elementary and high schools, whereas the weekday PM commuter peak and the student dismissal periods occur at separate times.

## Vehicle Speeds

Driving is a self-paced activity where each individual driver controls the speed of their vehicle according to perceived and actual roadway conditions. Posted speed limits provide the legal or allowed maximum travel speed which can be enforced by law enforcement agencies. Table 2 provides statistical data summarized from the speed study conducted along Hanover Street north of Evans Drive and along Evans Drive east of Hanover Street. The average vehicular speed is calculated as the arithmetic mean of the observed vehicle speeds (i.e., the sum of the speeds divided by the number of observations). The 85<sup>th</sup> percentile speed generally indicates the speed

<sup>8</sup> Dowling, Richard, et al. Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual. National Cooperative Highway Research Program Report 825, Washington, DC: National Academy of Sciences, 2016.



that most drivers consider safe and reasonable under ideal conditions. The pace speed is the 10-mph range with the greatest number of observations. Additional speed statistics such as the 15<sup>th</sup> and 95<sup>th</sup> percentile speeds are provided in the Traffic Count section of the Appendix.

**Table 2 Vehicle Speed Summary**

| Location/Direction                  | Speed Limit (mph) <sup>a</sup> | Average Speed (mph) | 85 <sup>th</sup> Percentile Speed (mph) | 10 mph Pace (mph) |
|-------------------------------------|--------------------------------|---------------------|-----------------------------------------|-------------------|
| <b>Hanover St north of Evans Dr</b> |                                |                     |                                         |                   |
| Northbound                          | 20/25                          | 15                  | 18                                      | 9-18              |
| Southbound                          | 20/25                          | 16                  | 19                                      | 11-20             |
| Combined                            | 20/25                          | 15                  | 18                                      | 9-18              |
| <b>Evans Dr east of Hanover St</b>  |                                |                     |                                         |                   |
| Eastbound                           | 20/30                          | 29                  | 32                                      | 23-32             |
| Westbound                           | 20/30                          | 27                  | 31                                      | 20-29             |
| Combined                            | 20/30                          | 30                  | 32                                      | 21-30             |

<sup>a</sup> The speed limit is 20 mph within the School Zones between 7:00 AM-4:30 AM along Hanover Street and during student arrival/dismissal time periods along Evans Drive (when lights are flashing). During other time periods, the posted speed limit along Hanover Street is 25 mph and the enforced speed limit Along Evans Drive is 30 mph.

As shown in Table 2, the vehicle speeds along Evans Drive were found to be higher than those along Hanover Street. The average and 85<sup>th</sup> percentile speeds along Hanover Street were found to be lower than the 20 mph speed limit within the school zone and the posted speed limit of 25 mph. The speeds along Evans Drive were noted to be slightly higher than the speed limit, with faster vehicle travel speeds in the eastbound direction.

## Transit

Within the study area, Heater Road between NH Route 120 and Hanover Street Extension is currently served by public transit in the form of Advance Transit. Advance Transit is a bus service provided for commuters in the Upper Valley region of Vermont and New Hampshire. The Advance Transit Blue Bus Route offers frequent weekday service between Dartmouth College, the Town of Hanover, Dartmouth Health, and the City of Lebanon. In addition, this fixed route service provides several daily trips to the Towns of Enfield and Canaan. The Blue Bus Route is in operation between 5:15 AM and 7:10 PM on weekdays with stops provided within the study area along Heater Road adjacent to Lebanon High School.

## Capacity and Queue Analyses

### Capacity Analysis Methodology

Intersection operational analyses were performed for the study area intersections with the 2022 Existing weekday AM, weekday PM, and Saturday midday peak hour traffic volumes based on the concepts and procedures in the Highway Capacity Manual (HCM) using the Trafficware Synchro Software computer program. This software program is an NHDOT approved traffic



analysis tool for determining intersection capacity operations. Based on NHDOT guidelines,<sup>9</sup> HCM 2000 methodologies<sup>10</sup> are preferred for signalized intersections. In addition, HCM 6th edition<sup>11</sup> is the NHDOT accepted methodology for unsignalized intersections. Therefore, the HCM 2000 methodologies and procedures have been used to evaluate operations at the NH Route 120, Old Etna Road, and Etna Road signalized intersection and the HCM 6<sup>th</sup> edition was used for the unsignalized study area intersections.

The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. The criteria for unsignalized intersections are different than for signalized intersections because drivers expect different performance levels from each type of intersection. The relationship between LOS and delay is summarized in Table 3.

**Table 3 Level of Service Criteria**

| LOS | Unsignalized Intersection/<br>Control Delay<br>(seconds per vehicle) <sup>a</sup> | Signalized Intersection Criteria<br>Average Total Delay<br>(seconds per vehicle) |
|-----|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| A   | < 10.0                                                                            | < 10.0                                                                           |
| B   | 10.1 to 15.0                                                                      | 10.1 to 20.0                                                                     |
| C   | 15.1 to 25.0                                                                      | 20.1 to 35.0                                                                     |
| D   | 25.1 to 35.0                                                                      | 35.1 to 55.0                                                                     |
| E   | 35.1 to 50.0                                                                      | 55.1 to 80.0                                                                     |
| F   | > 50.0                                                                            | > 80.0                                                                           |

Source: Highway Capacity Manual.

<sup>a</sup> LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.00 regardless of the control delay.

## Queue Length Methodology

The study area intersections were also evaluated with respect to vehicle queuing. For signalized intersections, the quantitative measures of vehicle queue length are defined as the 50<sup>th</sup> and the 95<sup>th</sup> percentile queues. The 50<sup>th</sup> percentile queue represents the average queue length during the peak hour and the 95<sup>th</sup> percentile queue represents the calculated maximum back of queue that has a probability of 5 percent or less of being exceeded during the peak hour.

For unsignalized intersections, the quantitative measure of vehicle queue length is defined as the 95<sup>th</sup> percentile queue. The 95<sup>th</sup> percentile queue represents the percent of time during the peak period being analyzed that the calculated maximum back of queue would be equal to or less than the percentile estimate (i.e., the maximum queue length that would be exceeded only 5 percent of the time). HCM 6<sup>th</sup> edition methodologies produce queue results in number of

<sup>9</sup> New Hampshire Department of Transportation Bureau of Traffic. Synchro Inputs Checklist. 16 Aug. 2021.

<sup>10</sup> Transportation Research Board. Highway Capacity Manual 2000. Washington, DC. 16 Jan. 1998.

<sup>11</sup> Transportation Research Board. Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis. Washington, DC. 2016



vehicles. Therefore, data presented for unsignalized analyses reflect queues in feet based on standard vehicle spacing of 25 feet per vehicle (front bumper to front bumper).<sup>12</sup>

## Intersection Operational Results

The capacity and queue length analysis results are summarized in Table 4 for the 2022 Existing traffic volume conditions. To better understand the effects of the peak-month and pandemic adjustments applied to the November traffic counts, separate intersection analyses were conducted for the study area intersections using the traffic counts without any adjustments. These supplemental analyses were evaluated to replicate typical traffic volume conditions as the study area intersections are influenced by the school and Dartmouth Health traffic and may not be impacted by these factors. The computer-generated analysis reports are provided in the Appendix.

Based on the traffic operational comparison between the 2022 Existing traffic volumes and the November 2022 traffic counts without seasonal and pandemic adjustments, the vehicle queues and delays for the latter analysis are more consistent with what were observed in the field and consistent with initial discussions with local officials. Therefore, the traffic volumes used within this traffic study and the associated intersection analyses are considered to be overestimated (i.e., results in longer delays and vehicle queues than may be realized).

The NH Route 120 signalized intersections with the I-89 southbound ramps, I-89 northbound ramps, Heater Road, and Etna Road/Old Etna Road are contained within an adaptive traffic control system (ATCS) in which traffic signal timings change or adapt based on actual traffic demand. To reflect these ATCS operations, the Synchro computer model was programmed with one coordinated phase per National Transportation Communications for Intelligent Transportation System Protocol (NTCIP) and a maximum recall placed on the coordinated phase on the other side of the ring barrier to signify that these phases would be called every cycle (cannot be skipped). For example, the NH Route 120 southbound through phase (Phase 2) at Etna Road and Old Etna Road represents the coordinated phase (Coordinated Maximum) with the NH Route 120 northbound approach set to maximum recall (Phase 6). In addition, the computer model was calibrated to reflect ATCS operations by adjusting the green time for different signal phases based on observed conditions (i.e., balancing the delays and volume-to-capacity [v/c] ratios for the critical movements by adjusting the green time for separate phases).

As shown, the 2022 Existing weekday AM peak hour conditions reflect long delays experienced on the Evans Drive westbound approach to Hanover Street which are common near schools during the student arrival time period. The NH Route 120 signalized intersection with Etna Road and Old Etna Road operates at with long delays (LOS E) during the weekday AM peak hour. During the weekday AM, weekday PM, and Saturday midday peak hours, long delays are experienced on different lane groups (LOS E and F). In addition, long delays (LOS F) are experienced on the NH Route 120 northbound left-turn lane at the unsignalized intersection with Evans Drive during the weekday AM and PM peak hours. Similarly, the Evans Drive minor street movements experience long delays during the weekday AM and PM peak hours due to the heavy demand of conflicting NH Route 120 traffic. Due to operational constraints along the NH Route 120 corridor, NHDOT officials are in the process of evaluating design alternatives as described within the Planned Roadway Improvements section of this Traffic Impact Study.

<sup>12</sup> Institute of Transportation Engineers. Traffic Engineering Handbook, 7th ed. John Wiley & Sons, Inc. Hoboken, NJ. Jan. 2016.



**Table 4 Capacity Analysis Summary 2022 Existing Conditions**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |       |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street and Evans Drive</b>                      |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Evans Dr WB Approach                                       | 0.98          | 44.8  | E   | --              | 425             | 0.66                              | 16.1  | C   | --              | 130             |
| Hanover St SB Left                                         | 0.20          | 7.8   | A   | --              | 18              | 0.13                              | 7.6   | A   | --              | 12              |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Evans Dr WB Approach                                       | 0.09          | 8.8   | A   | --              | 8               | 0.06                              | 8.6   | A   | --              | 5               |
| Hanover St SB Left                                         | 0.08          | 7.4   | A   | --              | 8               | 0.06                              | 7.4   | A   | --              | 5               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Evans Dr WB Approach                                       | 0.04          | 8.5   | A   | --              | 2               | 0.04                              | 8.5   | A   | --              | 2               |
| Hanover St SB Left                                         | 0.02          | 7.2   | A   | --              | 2               | 0.01                              | 7.2   | A   | --              | 0               |
| <b>Hanover Street and Old Etna Road</b>                    |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.31          | 11.9  | B   | --              | 32              | 0.19                              | 10.4  | B   | --              | 18              |
| Hanover St SB Left                                         | 0.00          | 7.9   | A   | --              | 0               | 0.00                              | 7.7   | A   | --              | 0               |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.05          | 9.4   | A   | --              | 2               | 0.04                              | 9.2   | A   | --              | 2               |
| Hanover St SB Left                                         | 0.00          | 7.5   | A   | --              | 0               | 0.00                              | 7.4   | A   | --              | 0               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.01          | 8.8   | A   | --              | 0               | 0.01                              | 8.8   | A   | --              | 0               |
| Hanover St SB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --                                | --    | --  | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted on this movement.



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group           | 2022 Existing |       |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|----------------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                                      | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street Extension, Heater Road, and Mount Support Road</b> |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday AM</i>                                                    |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.13          | 12.1  | B   | --              | 12              | 0.08                              | 10.7  | A   | --              | 5               |
| Heater Rd NB Left                                                    | 0.00          | 7.7   | A   | --              | 0               | 0.00                              | 7.6   | A   | --              | 0               |
| <i>Weekday PM</i>                                                    |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.04          | 13.2  | B   | --              | 2               | 0.04                              | 11.6  | B   | --              | 2               |
| Heater Rd NB Left                                                    | 0.00          | 8.5   | A   | --              | 0               | 0.00                              | 8.1   | A   | --              | 0               |
| <i>Saturday Midday</i>                                               |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.02          | 9.6   | A   | --              | 2               | 0.02                              | 9.4   | A   | --              | 0               |
| Heater Rd NB Left                                                    | 0.00          | 0.0   | A   | --              | 0               | 0.00                              | 0.0   | A   | --              | 0               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |       |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Old Etna Road and Heater Road</b>                       |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.41          | 12.9  | B   | --              | 50              | 0.24                              | 9.3   | A   | --              | 22              |
| Old Etna Rd WB Approach                                    | 0.36          | 12.5  | B   | --              | 40              | 0.21                              | 9.5   | A   | --              | 20              |
| Heater Rd NB Approach                                      | 0.55          | 15.6  | C   | --              | 82              | 0.32                              | 10.3  | B   | --              | 35              |
| Heater Rd SB Approach                                      | 0.38          | 12.9  | B   | --              | 45              | 0.22                              | 9.6   | A   | --              | 20              |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.22          | 10.4  | B   | --              | 20              | 0.14                              | 8.8   | A   | --              | 12              |
| Old Etna Rd WB Approach                                    | 0.29          | 11.6  | B   | --              | 30              | 0.18                              | 9.6   | A   | --              | 15              |
| Heater Rd NB Approach                                      | 0.40          | 12.0  | B   | --              | 48              | 0.26                              | 9.4   | A   | --              | 25              |
| Heater Rd SB Approach                                      | 0.63          | 17.0  | C   | --              | 112             | 0.42                              | 11.2  | B   | --              | 50              |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.03          | 7.3   | A   | --              | 2               | 0.03                              | 7.3   | A   | --              | 2               |
| Old Etna Rd WB Approach                                    | 0.11          | 8.0   | A   | --              | 10              | 0.09                              | 7.8   | A   | --              | 8               |
| Heater Rd NB Approach                                      | 0.12          | 7.6   | A   | --              | 10              | 0.11                              | 7.5   | A   | --              | 10              |
| Heater Rd SB Approach                                      | 0.10          | 7.7   | A   | --              | 8               | 0.08                              | 7.6   | A   | --              | 8               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |        |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|------------------------------------------------------------|---------------|--------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay  | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |        |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |        |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.90          | >100.0 | F   | 95              | 169             | 0.67                              | 76.3  | E   | 64              | 102             |
| Old Etna Rd EB Through/Right                               | 0.95          | >100.0 | F   | 95              | 180             | 0.56                              | 67.8  | E   | 48              | 90              |
| Etna Rd WB Left                                            | 0.86          | >100.0 | F   | 106             | 224             | 0.67                              | 75.7  | E   | 69              | 133             |
| Etna Rd WB Left/Through/Right                              | 0.90          | >100.0 | F   | 112             | 247             | 0.66                              | 75.1  | E   | 70              | 137             |
| Etna Rd WB Right                                           | 0.05          | 47.7   | D   | 0               | 43              | 0.03                              | 50.1  | D   | 0               | 12              |
| NH Route 120 NB Left                                       | 0.62          | 74.6   | E   | 47              | 88              | 0.45                              | 66.9  | E   | 31              | 65              |
| NH Route 120 NB Through                                    | 1.11          | 83.5   | F   | 1,370           | 1,380           | 0.73                              | 18.0  | B   | 538             | 595             |
| NH Route 120 NB Right                                      | 0.22          | 7.1    | A   | 3               | 12              | 0.15                              | 6.0   | A   | 0               | 8               |
| NB Route 120 SB Left                                       | 0.59          | 70.0   | E   | 52              | 97              | 0.51                              | 67.6  | E   | 37              | 74              |
| NH Route 120 SB Through/Right                              | 0.36          | 12.4   | B   | 173             | 202             | 0.24                              | 9.9   | A   | 103             | 130             |
| Overall Intersection                                       | 1.04          | 66.9   | E   | --              | --              | 0.71                              | 23.2  | C   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |       |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.44          | 64.5  | E   | 43              | 78              | 0.37                              | 64.8  | E   | 32              | 63              |
| Old Etna Rd EB Through/Right                               | 0.36          | 64.0  | E   | 29              | 76              | 0.30                              | 64.3  | E   | 21              | 64              |
| Etna Rd WB Left                                            | 0.74          | 71.0  | E   | 144             | 207             | 0.68                              | 68.7  | E   | 109             | 164             |
| Etna Rd WB Left/Through/Right                              | 0.77          | 75.0  | E   | 151             | 218             | 0.70                              | 71.3  | E   | 113             | 171             |
| Etna Rd WB Right                                           | 0.03          | 42.8  | D   | 0               | 17              | 0.03                              | 45.8  | D   | 0               | 9               |
| NH Route 120 NB Left                                       | 0.46          | 71.3  | E   | 14              | 40              | 0.33                              | 70.0  | E   | 10              | 32              |
| NH Route 120 NB Through                                    | 0.36          | 15.5  | B   | 186             | 282             | 0.25                              | 12.1  | B   | 115             | 188             |
| NH Route 120 NB Right                                      | 0.08          | 6.1   | A   | 0               | 10              | 0.06                              | 5.5   | A   | 0               | 8               |
| NB Route 120 SB Left                                       | 0.60          | 71.4  | E   | 51              | 98              | 0.48                              | 66.5  | E   | 37              | 76              |
| NH Route 120 SB Through/Right                              | 0.85          | 25.5  | C   | 554             | 1,098           | 0.60                              | 15.1  | B   | 283             | 564             |
| Overall Intersection                                       | 0.82          | 29.9  | C   | --              | --              | 0.61                              | 23.0  | C   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |       |     |                 |                 | 2022 Existing without Adjustments |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|-----------------------------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |                                   |       |     |                 |                 |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |                                   |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.30          | 66.5  | E   | 18              | 38              | 0.27                              | 67.9  | E   | 12              | 29              |
| Old Etna Rd EB Through/Right                               | 0.13          | 65.4  | E   | 6               | 29              | 0.16                              | 67.2  | E   | 6               | 27              |
| Etna Rd WB Left                                            | 0.51          | 64.9  | E   | 51              | 96              | 0.46                              | 64.8  | E   | 42              | 84              |
| Etna Rd WB Left/Through/Right                              | 0.53          | 65.9  | E   | 52              | 100             | 0.47                              | 64.9  | E   | 43              | 86              |
| Etna Rd WB Right                                           | 0.02          | 50.5  | D   | 0               | 0               | 0.01                              | 51.4  | D   | 0               | 0               |
| NH Route 120 NB Left                                       | 0.33          | 70.0  | E   | 10              | 32              | 0.40                              | 75.3  | E   | 5               | 21              |
| NH Route 120 NB Through                                    | 0.23          | 8.6   | A   | 98              | 154             | 0.19                              | 7.4   | A   | 76              | 120             |
| NH Route 120 NB Right                                      | 0.06          | 4.6   | A   | 0               | 7               | 0.04                              | 4.2   | A   | 0               | 6               |
| NB Route 120 SB Left                                       | 0.41          | 66.6  | E   | 28              | 62              | 0.36                              | 66.5  | E   | 23              | 56              |
| NH Route 120 SB Through/Right                              | 0.20          | 7.3   | A   | 58              | 130             | 0.16                              | 5.8   | A   | 45              | 101             |
| Overall Intersection                                       | 0.27          | 16.9  | B   | --              | --              | 0.22                              | 15.4  | B   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 4 Capacity Analysis Summary 2022 Existing Conditions (Continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2022 Existing |         |     |                 |                 | 2022 Existing without Adjustments |         |     |                 |                 |
|------------------------------------------------------------|---------------|---------|-----|-----------------|-----------------|-----------------------------------|---------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay   | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c                               | Delay   | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120 and Evans Drive</b>                        |               |         |     |                 |                 |                                   |         |     |                 |                 |
| <i>Weekday AM</i>                                          |               |         |     |                 |                 |                                   |         |     |                 |                 |
| NH Route 120 NB Left                                       | 1.01          | 68.3    | F   | --              | 358             | 0.24                              | 8.0     | A   | --              | 22              |
| Evans Dr EB Left <sup>a</sup>                              | --            | --      | --  | --              | --              | --                                | --      | --  | --              | --              |
| Evans Dr EB Right                                          | 0.74          | 34.3    | D   | --              | 148             | 0.20                              | 9.3     | A   | --              | 18              |
| <i>Weekday PM</i>                                          |               |         |     |                 |                 |                                   |         |     |                 |                 |
| NH Route 120 NB Left                                       | 0.68          | 79.5    | F   | --              | 92              | 0.26                              | 24.5    | C   | --              | 25              |
| Evans Dr EB Left                                           | > 1.20        | > 100.0 | F   | --              | 45              | 0.42                              | > 100.0 | F   | --              | 28              |
| Evans Dr EB Right                                          | > 1.20        | > 100.0 | F   | --              | 278             | 0.58                              | 41.5    | E   | --              | 80              |
| <i>Saturday Midday</i>                                     |               |         |     |                 |                 |                                   |         |     |                 |                 |
| NH Route 120 NB Left                                       | 0.04          | 9.5     | A   | --              | 2               | 0.03                              | 9.0     | A   | --              | 2               |
| Evans Dr EB Left                                           | 0.04          | 28.4    | D   | --              | 2               | 0.02                              | 21.5    | C   | --              | 2               |
| Evans Dr EB Right                                          | 0.06          | 11.3    | B   | --              | 5               | 0.04                              | 10.6    | B   | --              | 2               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted on this movement.





# 3

## Future Conditions

The impact of site-generated traffic within the study area has been evaluated under two design horizons: 2025 and 2035 traffic volume conditions. Traffic volumes on the roadway network would include existing traffic, new traffic due to normal traffic growth, and traffic related to significant development by others that are expected to be completed within the design horizons. The 2025 design horizon represents opening conditions for the proposed development that can determine the project's traffic impacts, whereas the opening year conditions plus 10 years (2035) is typically used for planning purposes. Consideration of these factors resulted in the development of 2025 and 2035 No-Build traffic volumes, which assume the proposed project is not built. The incremental impacts of the proposed development may then be determined by adding site-generated traffic volumes (Build conditions) and making comparisons to the baseline (No-Build) conditions.

### No-Build Conditions

Traffic growth is a function of the expected land development in a region. To predict a rate at which traffic can be expected to grow during the forecast periods, both historical growth and planned areas developments were examined.

#### Historical Growth

An annual average traffic-growth percentage was determined based on NHDOT historical traffic volume data. A review of NHDOT permanent count station along NH Route 120 in Lebanon



revealed that traffic volumes experienced an annual increase of 0.07 percent between 2009 and 2019.<sup>13</sup> Consistent with NHDOT preference, a minimum of a 1.00 percent compounded annual growth rate was used to account for general population growth and traffic generated by smaller area developments. The 1.0 compounded annual growth rate was applied to the traffic volumes along the NH Route 120 corridor and not along the local roadway system as these movements are projected to be impacted by specific land development projects and not by general population growth. The NHDOT permanent count station data are provided in the Appendix.

## Background Developments

Traffic to be generated by planned developments anticipated to add substantial traffic volumes through the study area were considered in projecting future traffic volumes. Based on discussions with City of Lebanon Planning & Development staff, the following projects were identified:

- › The Dartmouth Health patient tower expansion project.
  - A new patient tower will be constructed to support 233,500 square feet of gross floor area and 128 beds on four levels. These site trips were obtained from the traffic study prepared for that project.<sup>14</sup>
- › Mount Support Road residential developments.
  - The Marek at Lebanon, NH is a 250-unit multifamily development to be constructed at 343 Mount Support Road in Lebanon. These site trips were obtained from the traffic study prepared for that project.<sup>15</sup>
  - A 309-unit multifamily residential development to be constructed at 401 Mount Support Road in Lebanon. At the time of the November 2022 traffic counts collected as part of the Lebanon Brickyard residential development, approximately 96 percent of the units were occupied.<sup>16</sup> Based on the trip-generation methodologies provided within that traffic study,<sup>17</sup> the remaining 4 percent of the residential units represent between 4 and 6 vehicles per hour during the weekday AM, weekday PM, and Saturday midday peak hours. Therefore, these minimal trips were considered to be accounted for within the 1.0 percent annual growth rate.
  - A 202-apartment unit development to be constructed at 402 Mount Support Road in Lebanon. These site trips were obtained from the traffic study prepared for that project.<sup>18</sup>
- › Redevelopment of Village Marketplace.
  - The redevelopment of the Village Marketplace site at 2 Mascoma Street in Lebanon is to include 152 residential dwelling units. Based on a review of the traffic study<sup>19</sup> prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.

<sup>13</sup> Ibid. 5.

<sup>14</sup> VHB. Traffic Impact and Access Study. Dartmouth Hitchcock Medical Center Expansion, Lebanon, NH. Dec. 2019.

<sup>15</sup> VHB. Traffic Impact Assessment. The Marek at Lebanon, NH: 343 Mount Support Road, Lebanon, New Hampshire. 28 Feb. 2020.

<sup>16</sup> 611 of the 638 bedrooms (~96%) were occupied in November 2022.

<sup>17</sup> VHB. Traffic Impact Assessment. Proposed Multi-Family Housing Development: 401 Mount Support Road, Lebanon, NH. 7 Feb. 2020.

<sup>18</sup> VHB. Traffic Impact Assessment. Proposed Apartment Development: 402 Mount Support Road, Lebanon, NH. 27 Apr. 2020.

<sup>19</sup> Wall Consultant Group. Village Marketplace Redevelopment – Transportation Review, Lebanon, NH. 22 Apr. 2022.



- › Lebanon Woolen Mill residential development.
  - The development consists of replacing a commercial laundry facility, a dry-cleaning plant and retail facility, and an apartment building with 196 apartment units at 1 Foundry Street in Lebanon. Based on a review of the traffic study<sup>20</sup> prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.
- › Starbucks restaurant.
  - A Starbucks restaurant with a drive-through window is to be located within Centerra Market Place located off Centerra Parkway in Lebanon. Based on a review of the traffic study<sup>21</sup> prepared for that project, the site trips were determined to be accounted for within the 1.0 percent annual growth rate.

## Planned Roadway Improvements

NHDOT officials are developing improvements along the NH Route 120 corridor between Hanover Street (to the south) and Old Etna Road/Etna Road (to the north). This project (Lebanon 29612) is intended to improve operations, progression, and safety along the corridor that includes the I-89 interchange at Exit 18. During the December 1, 2023 meeting with City of Lebanon, NHDOT, and UVLSRPC officials, NHDOT engineers stated that a preferred alternative has not been determined. Therefore, the proposed geometry identified in Alternative 1 presented at the November 16, 2022 Project Advisory Committee meeting was recommended to be considered to be in place under the 2035 No-Build conditions for the purposes of this Traffic Impact Study. These improvements are subject to change as part of further evaluation and design for the NHDOT roadway project. Within the study area, these improvements consist of the following:

- › NH Route 120 and Evans Drive:
  - Widen the NH Route 120 northbound approach to provide an exclusive left-turn lane and three through lanes (i.e., an additional through lane).
  - Widen the NH Route 120 southbound approach to provide two through lanes and a shared through/right-turn lane (i.e., an additional through lane).
  - Restrict left turns from the Evans Drive westbound approach (i.e., right turns only onto NH Route 120 southbound).
- › NH Route 120, Old Etna Road, and Etna Road:
  - Widen the Old Etna Road eastbound approach to provide an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane (i.e., added an additional through lane and an exclusive right-turn lane).
  - Widen the Etna Road westbound approach to provide two left-turn lanes, a through lane, and an exclusive right-turn lane (i.e., added an additional left-turn lane)

While these improvements are anticipated to improve transportation operations, mobility, and safety along the corridor, an indirect result may be the redistribution of vehicles currently traveling along the Mount Support Road/ Heater Road corridor that avoid the NH Route 120 corridor may change their travel route onto the major highway system. For the purposes of this

<sup>20</sup> Wall Consultant Group. Lebanon Woolen Mill Transportation Study, Lebanon, NH. 10 Aug. 2022.

<sup>21</sup> Vanasse & Associates, Inc. Transportation Impact Assessment. Proposed Starbucks Restaurant, Lebanon, NH. Oct. 2022.



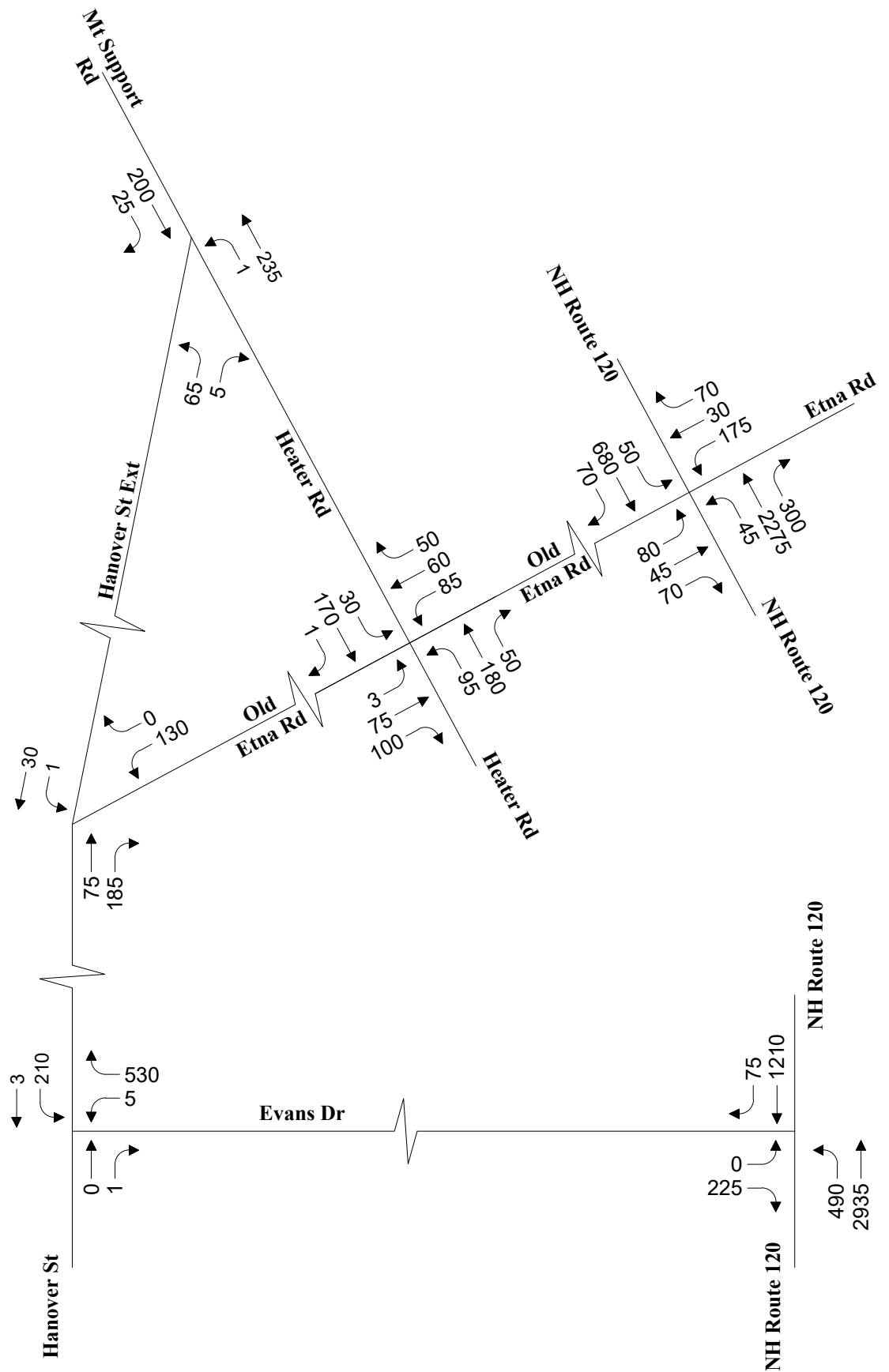
Traffic Impact Study, no vehicles were redistributed from the local corridor onto the state highway system with the NH Route 120 improvements in place.

## No-Build Traffic Volumes

The 2025 No-Build peak hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (or 3.0 percent over 3 years) to the 2022 Existing volumes and adding the vehicle trips associated with the Dartmouth Health patient tower expansion project and two residential developments along Mount Support Road. The 2025 No-Build traffic volumes are shown graphically for the study area intersections on Figures 5, 6, and 7 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively.

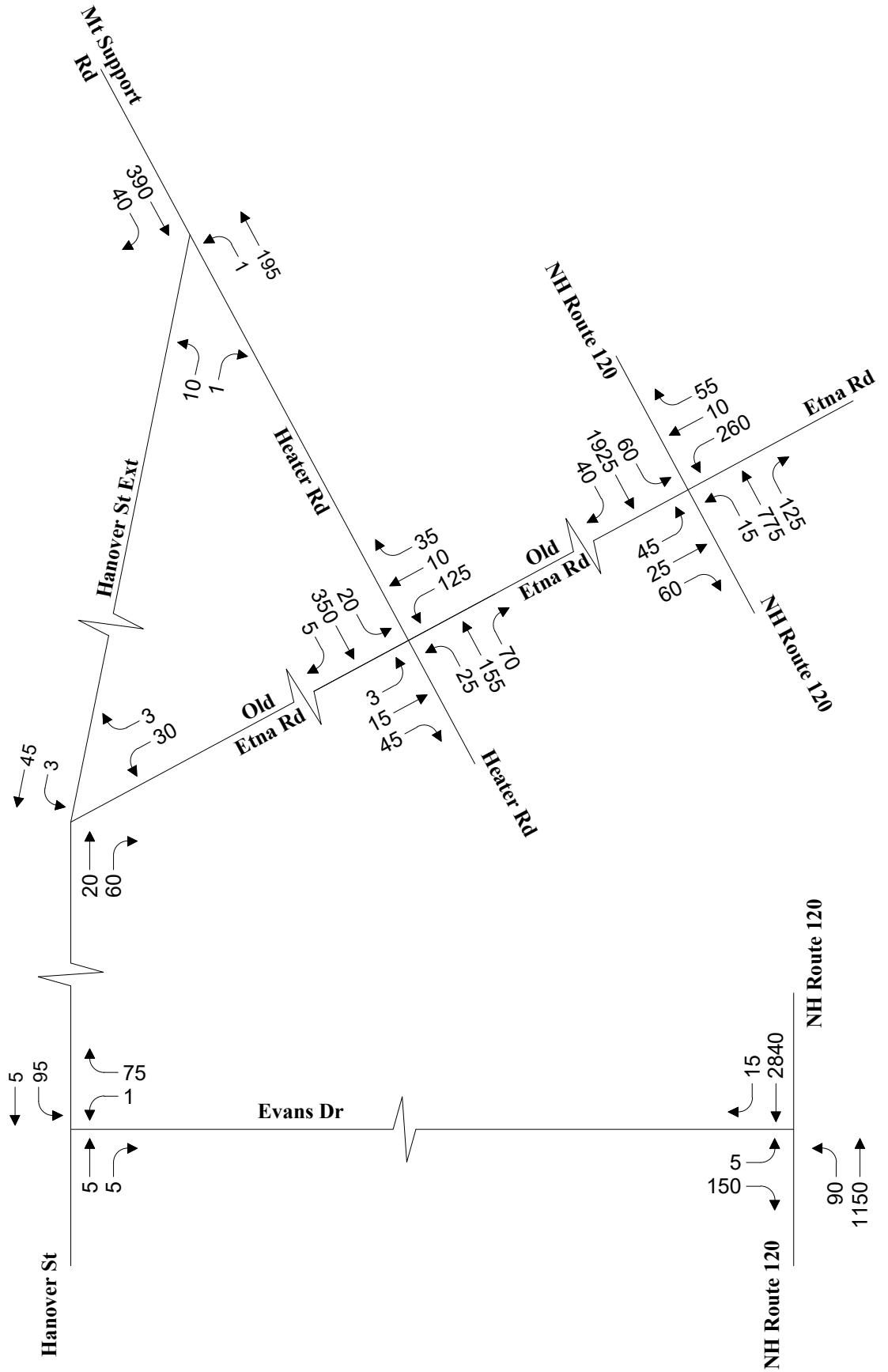
The 2035 No-Build peak-hour traffic volumes were accordingly developed by applying a 1.0 percent compounded annual traffic growth rate (or 13.8 percent over 13 years) to the 2022 Existing volumes and adding the vehicle trips associated with the Dartmouth Health patient tower expansion project and two residential developments along Mount Support Road. In addition, the NHDOT Alternative 1 improvements being considered as part of the NH Route 120 corridor project were evaluated to be in place. The 2035 No-Build traffic volumes are shown graphically for the study area intersections on Figures 8, 9, and 10 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively.





### Figure 5





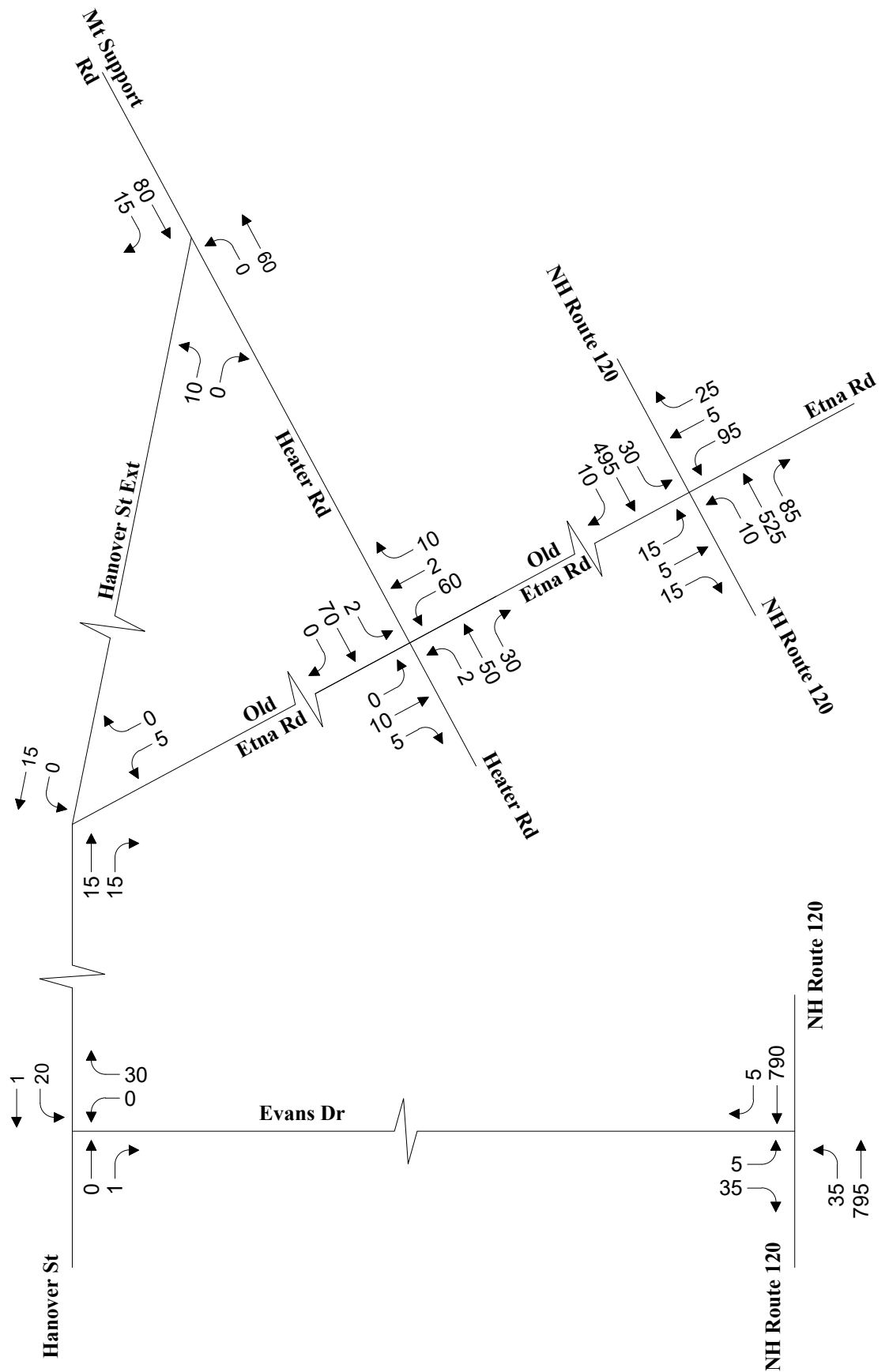
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2025 No-Build Weekday Evening Peak Hour Traffic Volumes

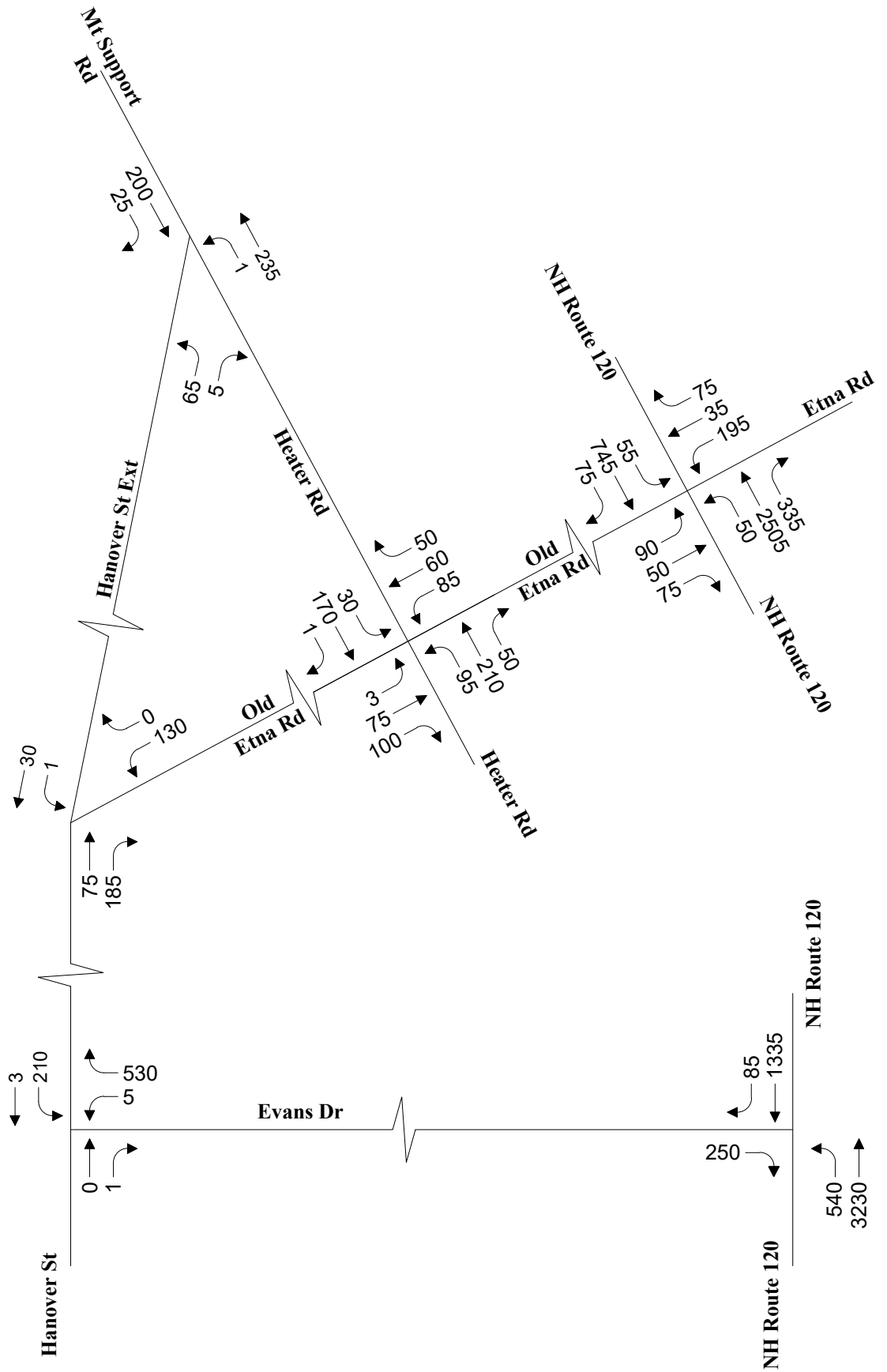
Figure 6





### 2025 No-Build Saturday Midday Peak Hour Traffic Volumes





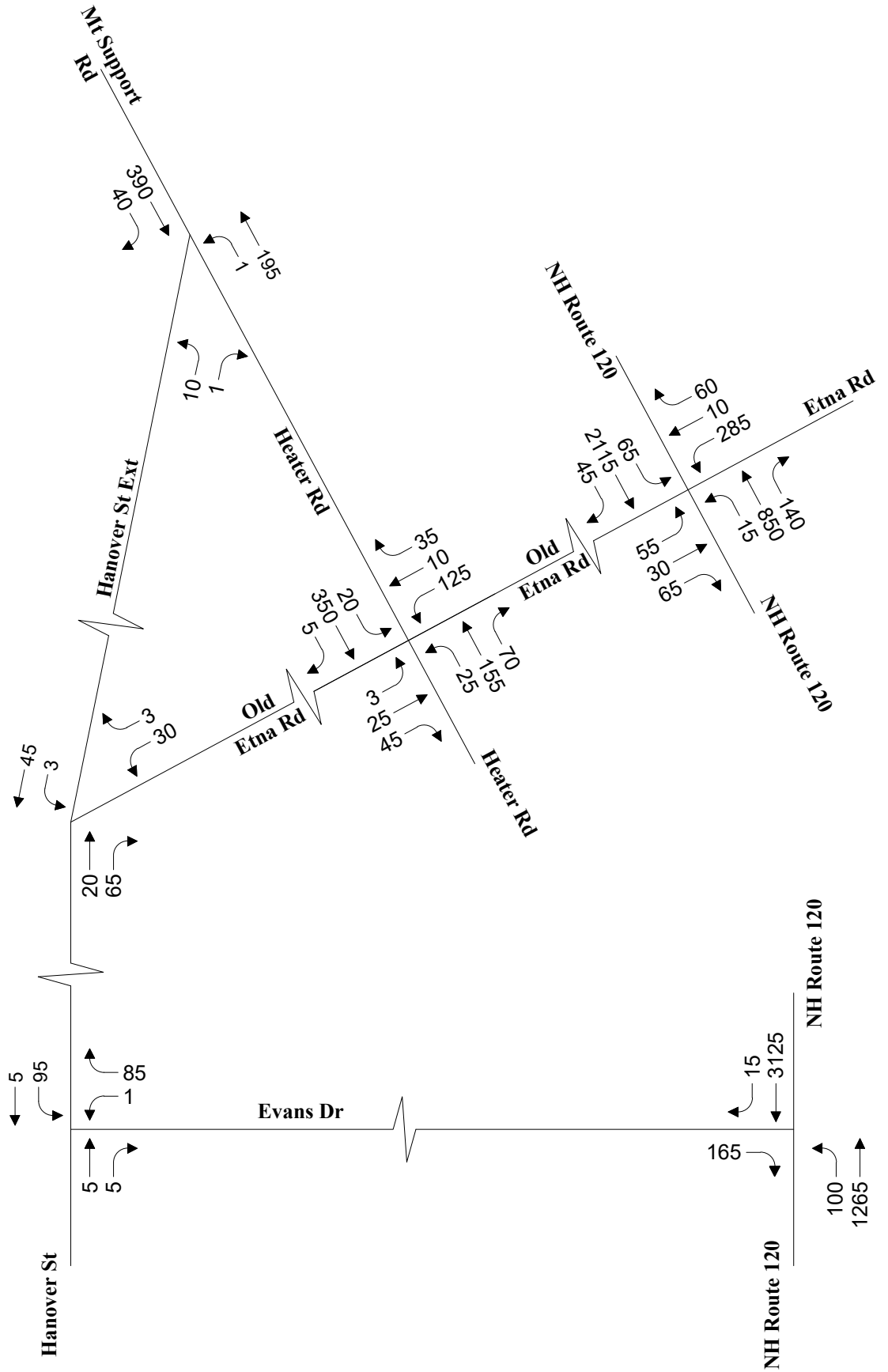
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2035 No-Build Weekday Morning Peak Hour Traffic Volumes

Figure 8





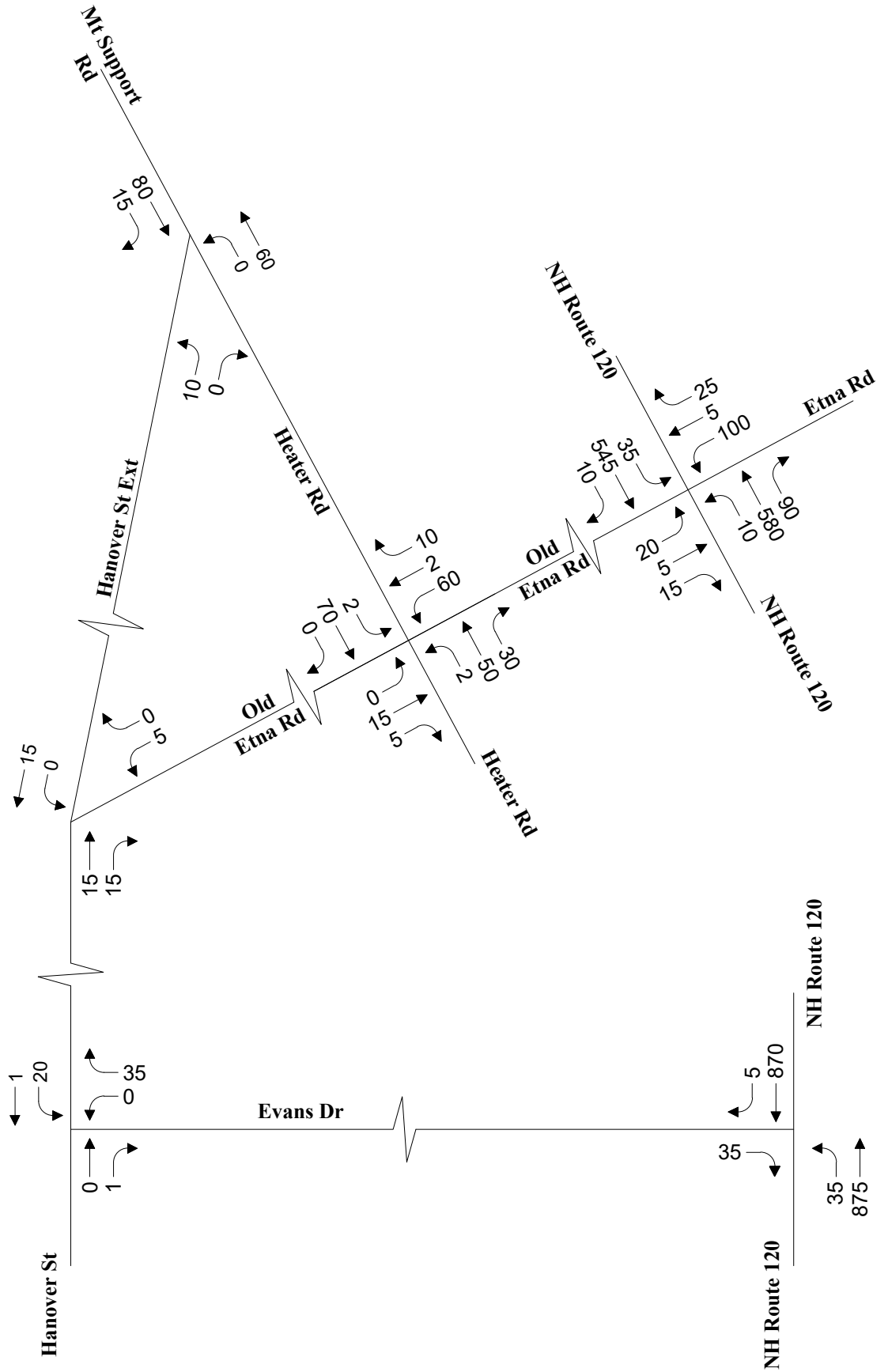
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2035 No-Build Weekday Evening Peak Hour Traffic Volumes

Figure 9





Not to Scale



2035 No-Build Saturday Midday Peak Hour Traffic Volumes

Figure 10



## Build Conditions

The proposed development program consists of constructing 474 apartment units in 10 four-story buildings and replacing the residence at 238 Hanover Street with a structure to contain a single-family residence for the property manager of the Lebanon Brickyard development. The property manager is anticipated to remain on-site during the weekday AM, weekday PM, and Saturday midday peak hours and would thus not be expected to generate site trips during these time periods. Access is proposed via two full access driveways along Hanover Street. The northern driveway will be located to the north of Old Etna Road and create a three-legged unsignalized intersection with single travel lanes on the Hanover Street northbound, Hanover Street southbound, and site driveway eastbound approaches. The southern driveway will be located across from Evans Drive to form a standard four-way intersection with single travel lanes on the Hanover Street northbound, Hanover Street southbound, Evans Drive westbound, and site driveway eastbound approaches.

## Sight Distance

As proposed, full access driveways will be constructed along the west side of Hanover Street north of Old Etna Road (north site driveway) and across from Evans Drive (south site driveway). Sight distances have been evaluated at the proposed site driveway locations to determine if the available sightlines for vehicles exiting the site meet or exceed the minimum distances required for approaching vehicles to safely stop. The available sight distances were compared with minimum requirements, as established by the American Association of State Highway and Transportation Officials (AASHTO).<sup>22</sup> AASHTO is the national standard by which vehicle sight distance is calculated, measured, and reported.

Sight distance is the length of roadway ahead visible to the driver. The Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path. The Intersection Sight Distance (ISD) is provided on minor street approaches to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway. In accordance with the AASHTO manual, the ISD must be equal to or greater than the minimum required SSD in order to provide safe operations at an intersection to anticipate and avoid collisions.<sup>23</sup> The available SSD and ISD at the proposed site driveway locations were measured and compared to minimum requirements as established by AASHTO. The required minimum sight distances for each speed are shown in Table 5.

As indicated in Table 5, available sight distances to the north and south of the proposed site driveways exceed the AASHTO SSD and ISD minimum requirements. To encourage safe and efficient flow of traffic to and from the site, proposed plantings, vegetation, landscaping, and signing along the site frontage and at the site driveway are recommended to be kept low to the ground or set back sufficiently from the edge of the roadways so as not to inhibit the available sightlines.

<sup>22</sup> American Association of State Highway and Transportation Officials. A Policy on Geometric Design of Highways and Streets, 7th ed. Washington, D.C. 2018.

<sup>23</sup> AASHTO, page 9-35.



**Table 5 Sight Distance Summary**

| Location/Condition                    | Stopping Sight Distance (feet) |               | Intersection Sight Distance (feet) |               |
|---------------------------------------|--------------------------------|---------------|------------------------------------|---------------|
|                                       | To/From North                  | To/From South | To/From North                      | To/From South |
| <b>Hanover St North Site Driveway</b> |                                |               |                                    |               |
| Measured                              | >300                           | >300          | >300                               | >300          |
| Minimum Required <sup>a</sup>         | 155                            | 155           | 155                                | 155           |
| <b>Hanover St South Site Driveway</b> |                                |               |                                    |               |
| Measured                              | >300                           | >300          | >300                               | >300          |
| Minimum Required <sup>a</sup>         | 155                            | 155           | 155                                | 155           |

<sup>a</sup> Minimum required SSD values based on the posted speed limit (25 mph) and minimum required ISD values are consistent with SSD values. Based on AASHTO Table 9-7.

## Trip Generation

To estimate the volume of traffic to be generated by the proposed project, trip rates published in the Institute of Transportation Engineers (ITE) Trip Generation Manual<sup>24</sup> were researched for Land Use Code 221 (Multifamily Housing [Mid-Rise]). The property manager is anticipated to remain on-site during the weekday AM, weekday PM, and Saturday midday peak hours and would thus not be expected to generate site trips during these time periods. A summary of the ITE trip-generation data is provided in Table 6 with the trip-generation calculations provided in the Appendix.

**Table 6 Trip-Generation Summary**

| Peak Hour/Direction              | Site Trips <sup>a</sup> |
|----------------------------------|-------------------------|
| <b>Weekday AM Peak Hour</b>      |                         |
| Enter                            | 45                      |
| Exit                             | 152                     |
| Total                            | 197                     |
| <b>Weekday PM Peak Hour</b>      |                         |
| Enter                            | 113                     |
| Exit                             | 72                      |
| Total                            | 185                     |
| <b>Saturday Midday Peak Hour</b> |                         |
| Enter                            | 98                      |
| Exit                             | 93                      |
| Total                            | 191                     |

<sup>a</sup> ITE Land Use Code 221 (Multifamily Housing [Mid-Rise]) for 474 dwelling units.

As shown, the proposed development is projected to generate 197 trips (45 entering and 152 exiting) during the weekday AM peak hour, 185 trips (113 entering and 72 exiting) during

<sup>24</sup> Institute of Transportation Engineers. Trip Generation Manual, 11th ed. Washington, DC, Sept. 2021.



the weekday PM peak hour, and 191 trips (97 entering and 93 exiting) during the Saturday midday peak hour. Since the development is estimated to generate more than 100 vehicle trips per hour, Article V Section 5.1.G.2 of the City of Lebanon's Site Plan Review Regulations requires the preparation of a Traffic Impact Study.

## Build Traffic Volumes

The directional distribution of the site generated traffic was approximated based on United States Census Bureau data for the City of Lebanon and existing traffic flow patterns within the study area. A summary of the distribution data is provided in the Appendix. Based on the traffic-generation and distribution estimates for the proposed residential development, the site trips were assigned to the adjacent roadway network. The project-generated traffic volumes are shown in Figures 11 through 13.

The project-generated traffic volumes were combined with the No-Build traffic volumes to develop the Build peak-hour traffic-volume networks. The 2025 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes are illustrated in Figures 14, 15, and 16, respectively. The 2035 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes are illustrated on Figures 17, 18, and 19, respectively.

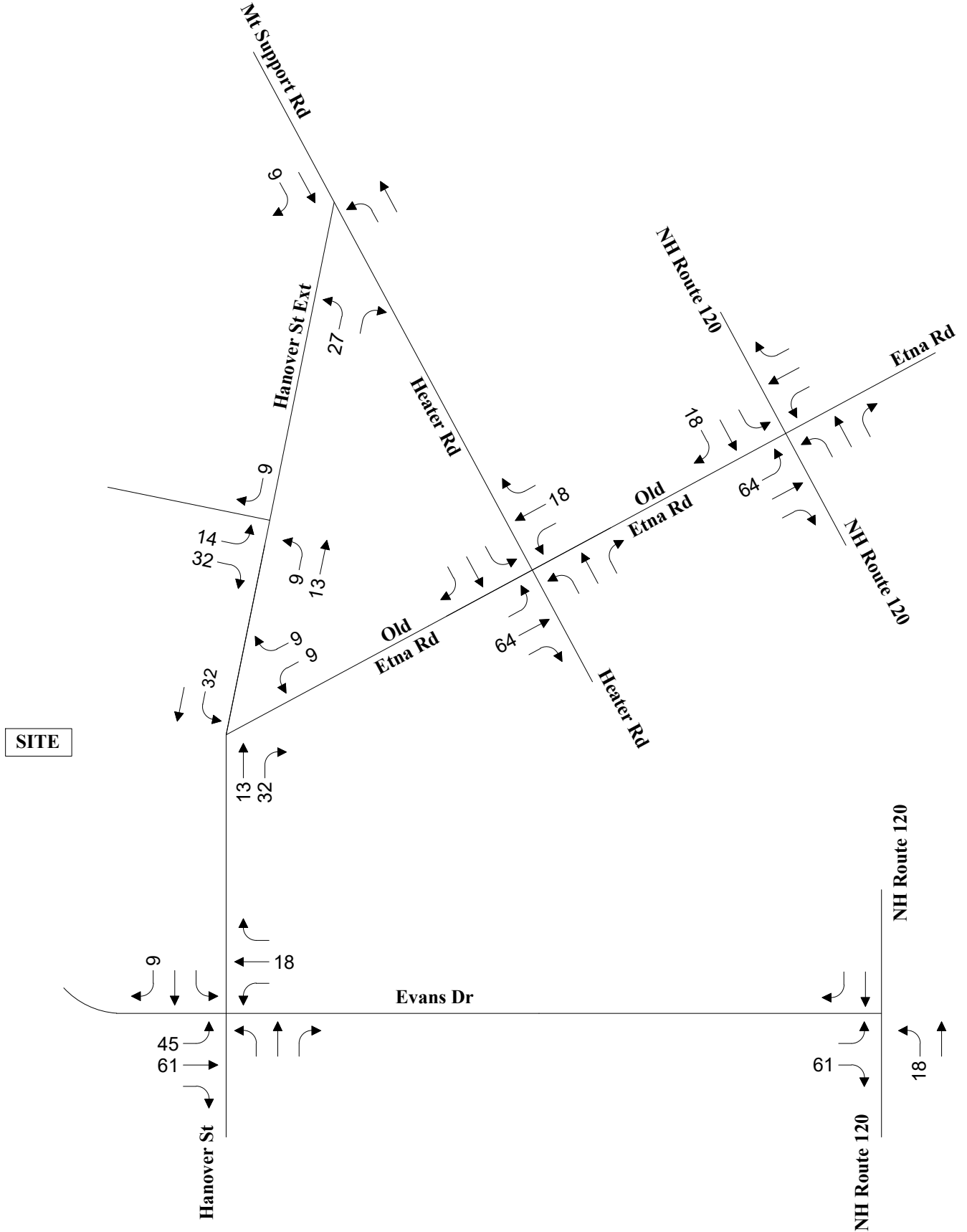
In accordance with ITE methodologies<sup>25</sup> and NHDOT guidance,<sup>26</sup> a development estimated to generate 100 vehicles per hour or more through an intersection (total of entering and exiting trips) may result in a change in vehicular operations (i.e., noticeably drop level of service or increase v/c ratios). In general, traffic increases less than this threshold could be attributed to the fluctuation of vehicles due to driver patterns that occur during the day, on different days of the week, or different months of the year. Based on standard traffic engineering practice and methodologies, Figures 11 through 13 show that the proposed development is projected to meet this threshold only at the proposed Hanover Street southern site driveway during the peak hours (119-133 vehicles per hour). Accordingly, improvements have been evaluated and are proposed at the Hanover Street, Evans Drive, and southern site driveway intersection within the Improvements section of this Traffic Impact Study.

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<sup>25</sup> ITE Recommended Practice: Multimodal Transportation Impact Analysis for Site Development. Washington, DC: Institute of Transportation Engineers. 2023.

<sup>26</sup> Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.





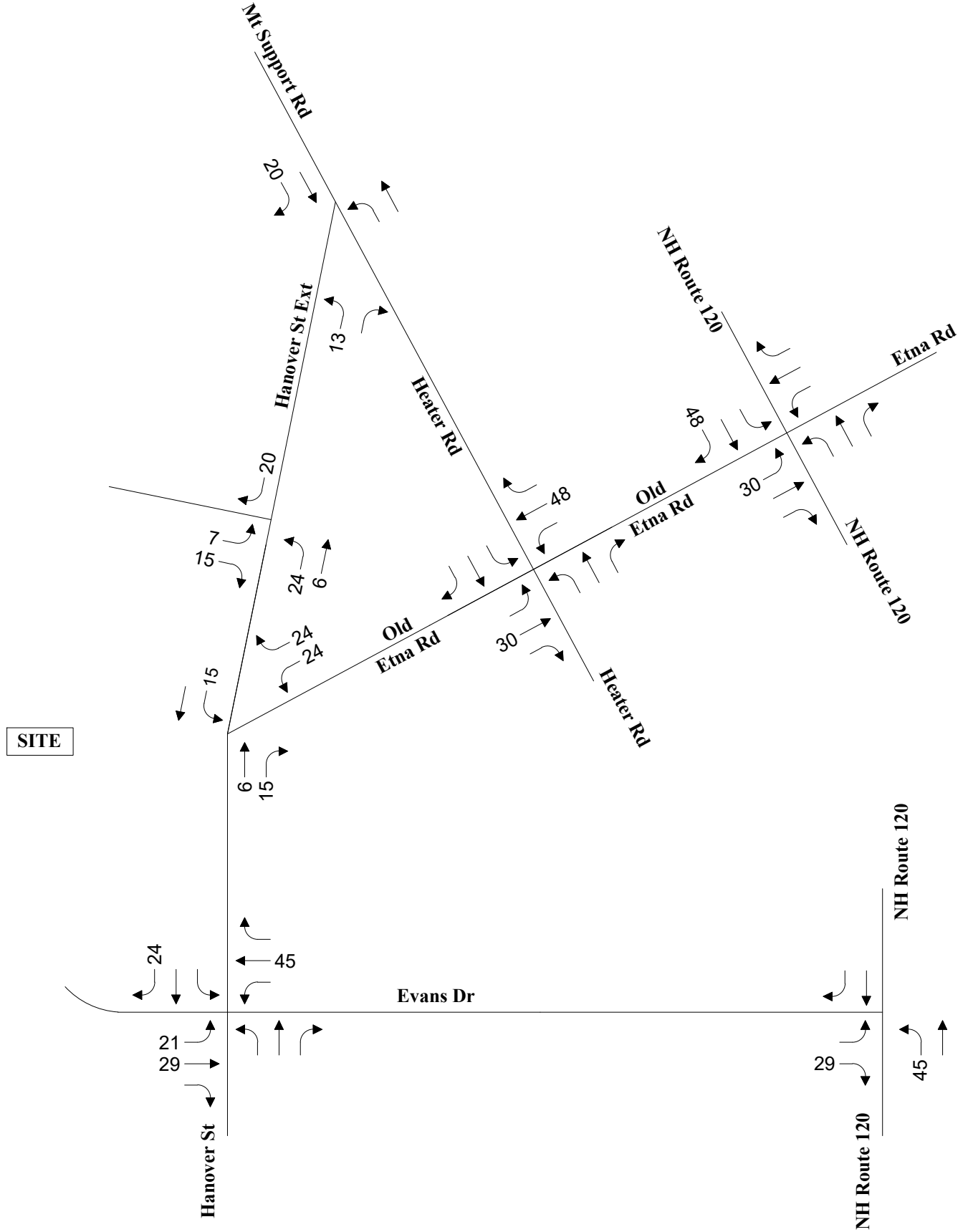
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Site Trips Weekday Morning  
Peak Hour Traffic Volumes

Figure 11





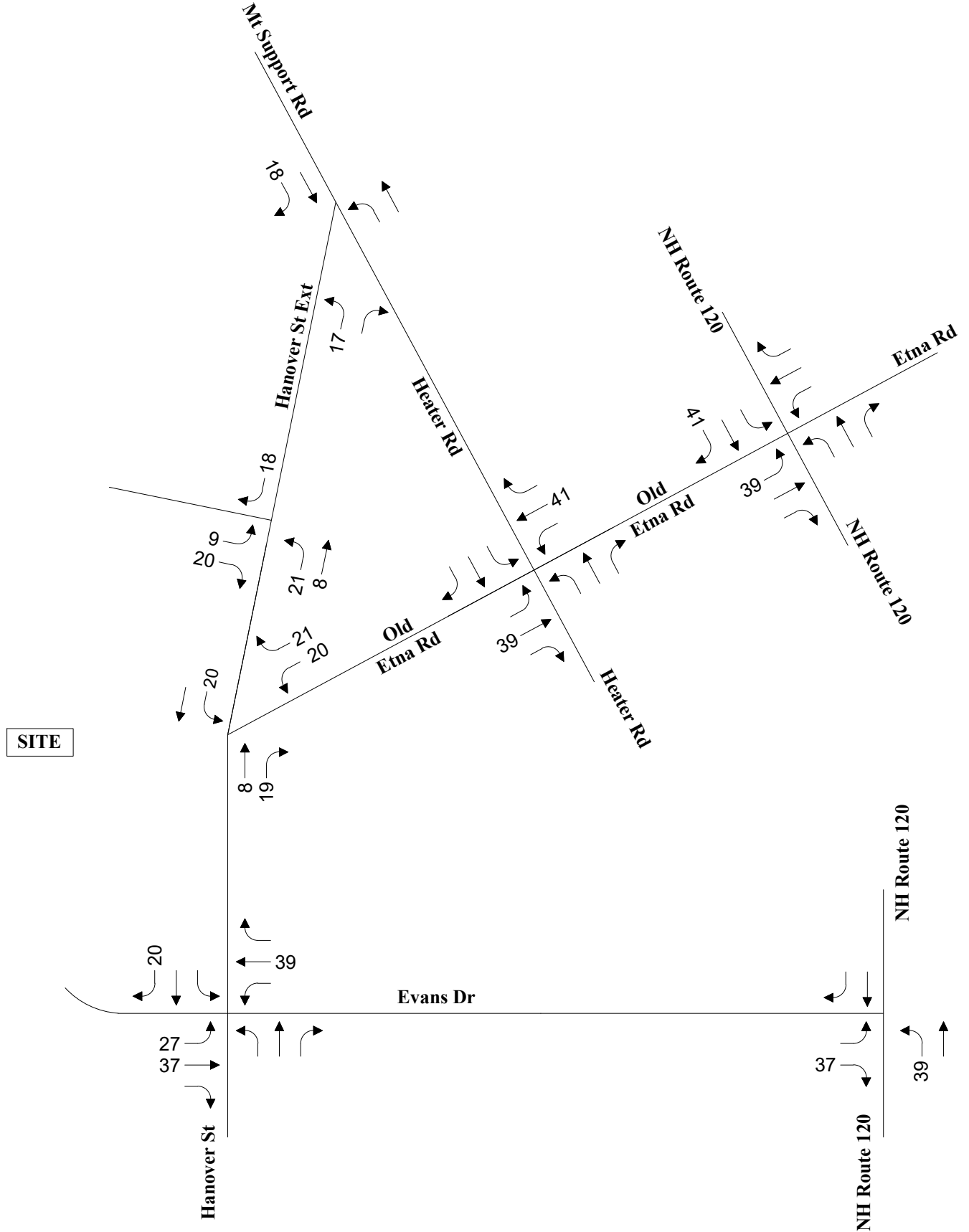
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Site Trips Weekday Evening  
Peak Hour Traffic Volumes

Figure 12





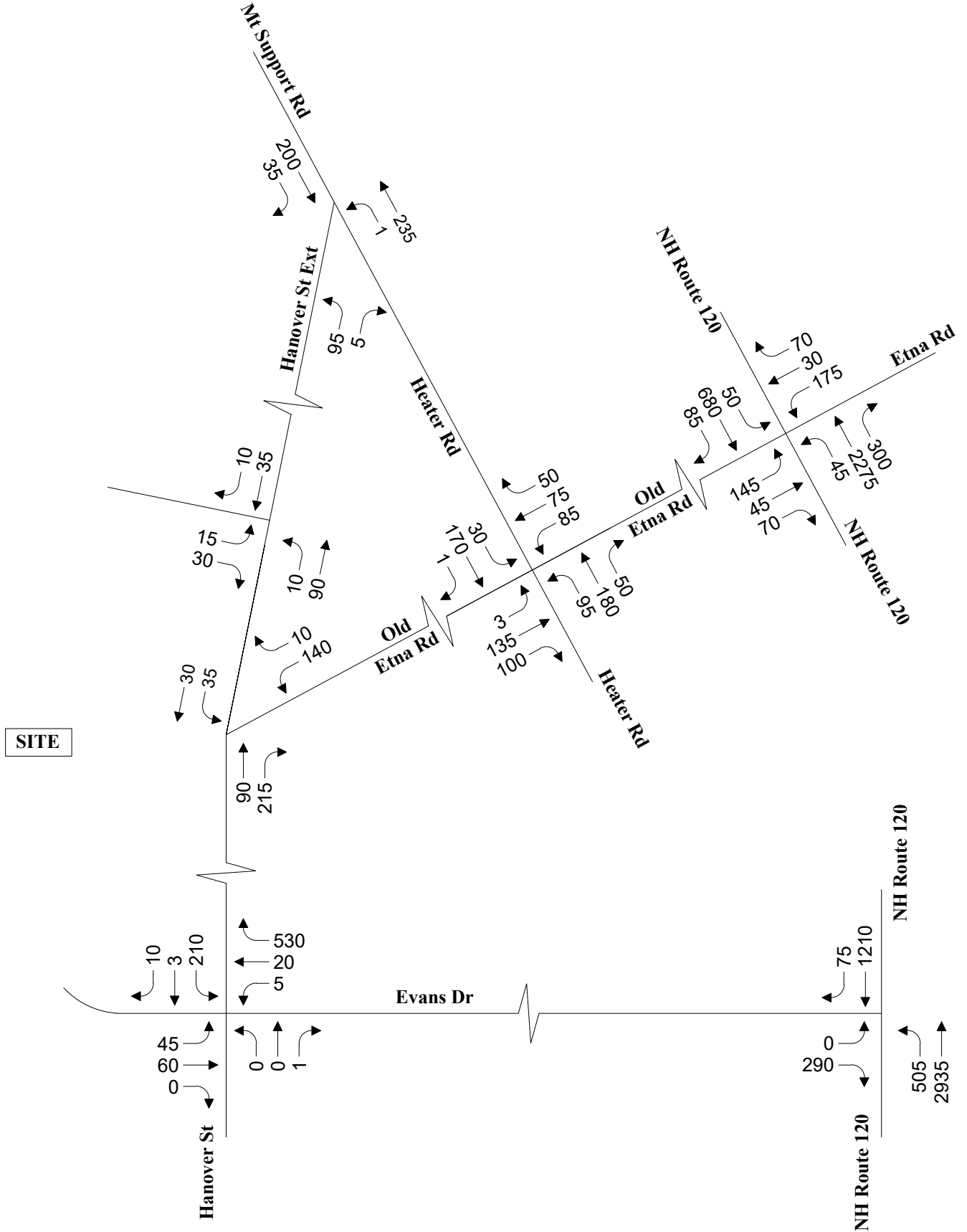
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Site Trips Saturday Midday  
Peak Hour Traffic Volumes

Figure 13





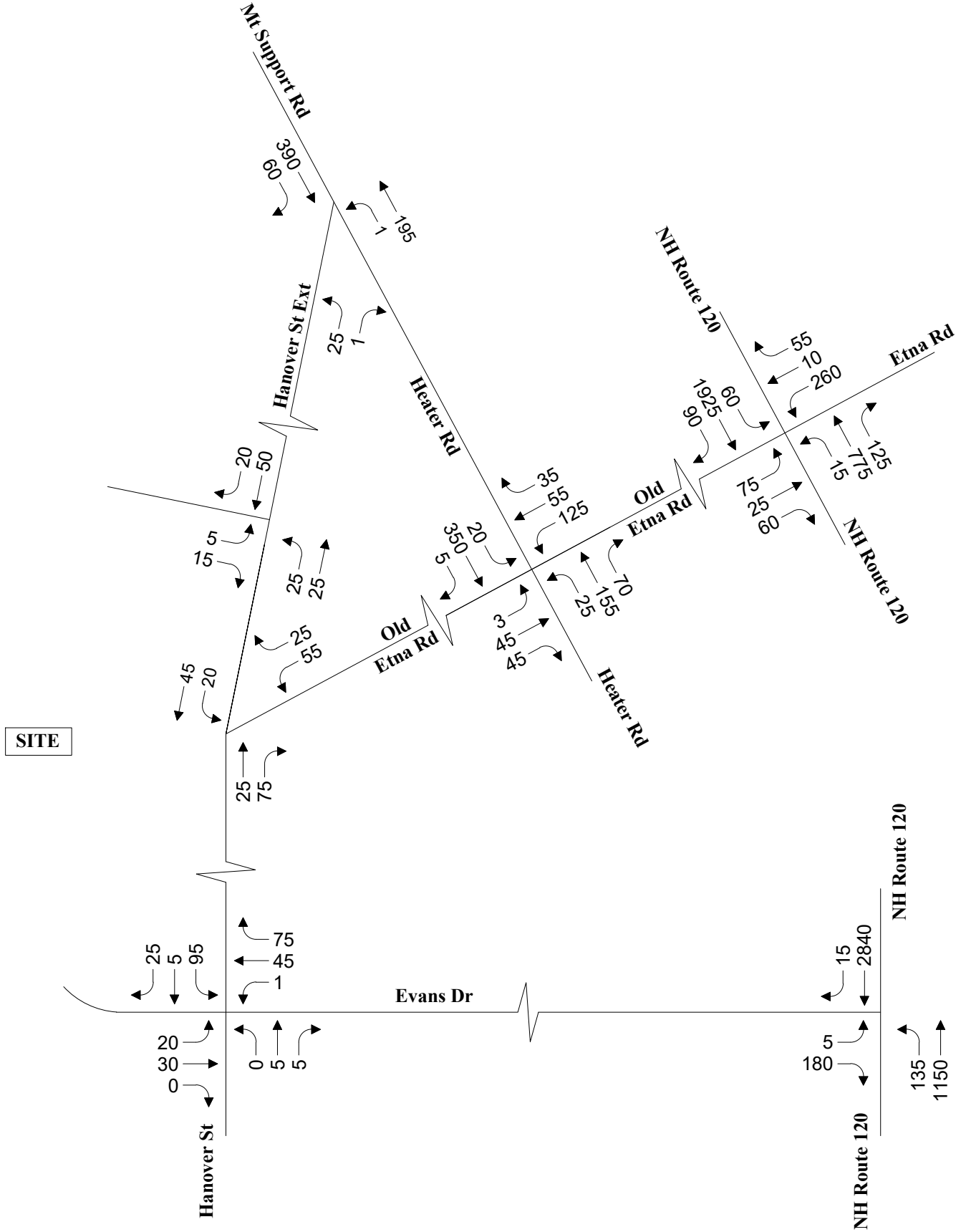
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2025 Build Weekday Morning  
Peak Hour Traffic Volumes

**Figure 14**





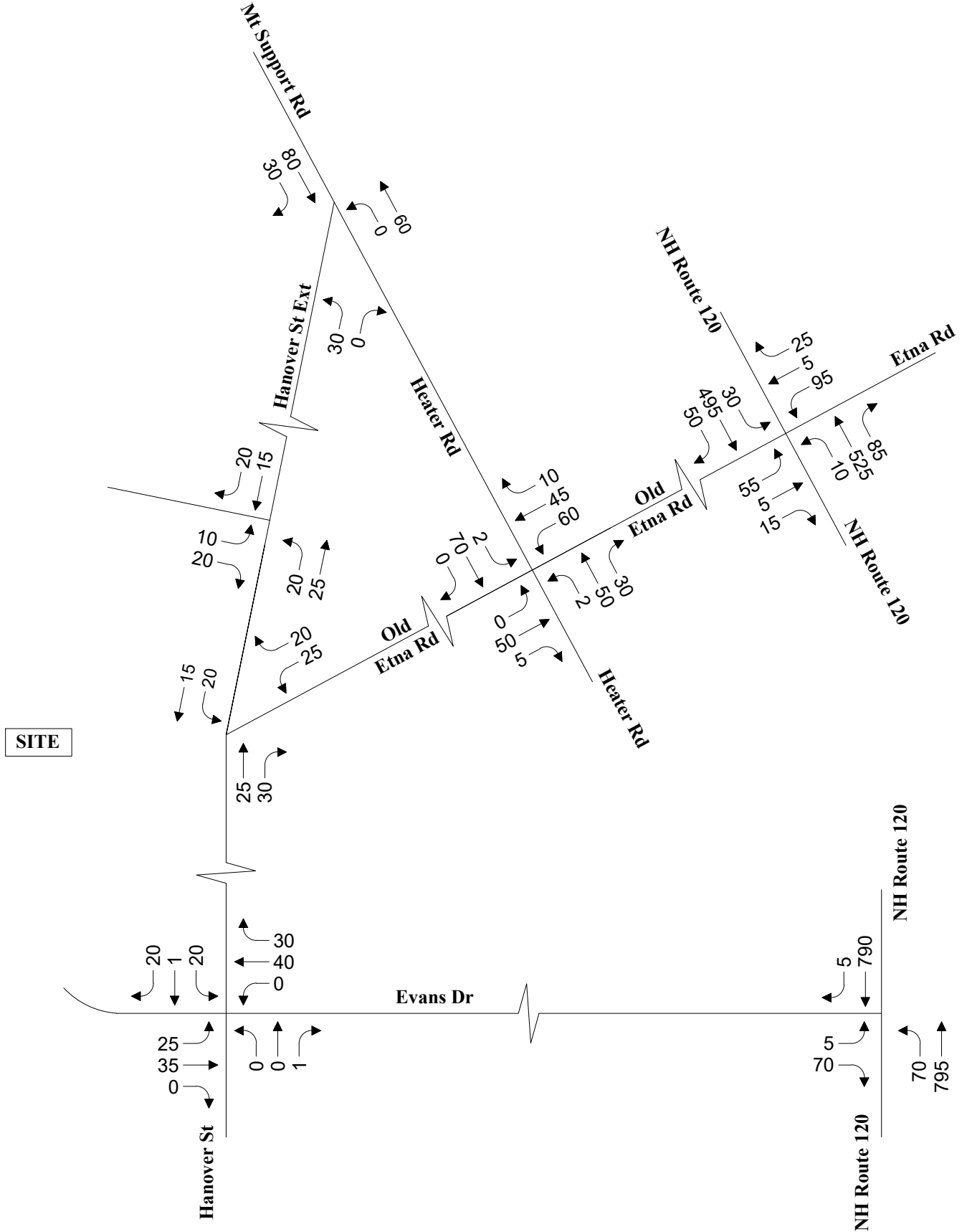
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2025 Build Weekday Evening  
Peak Hour Traffic Volumes

**Figure 15**





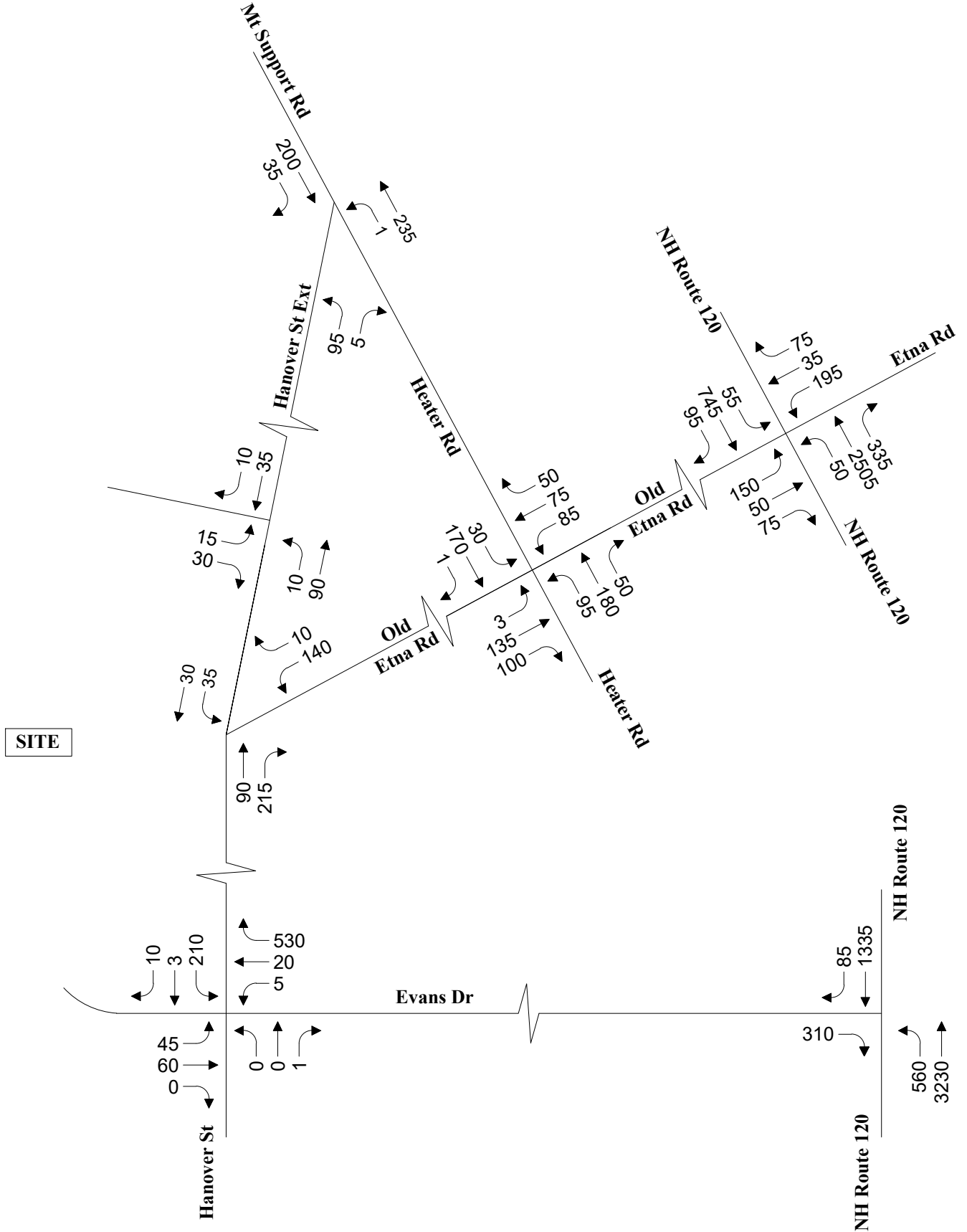
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2025 Build Saturday Midday  
Peak Hour Traffic Volumes

**Figure 16**





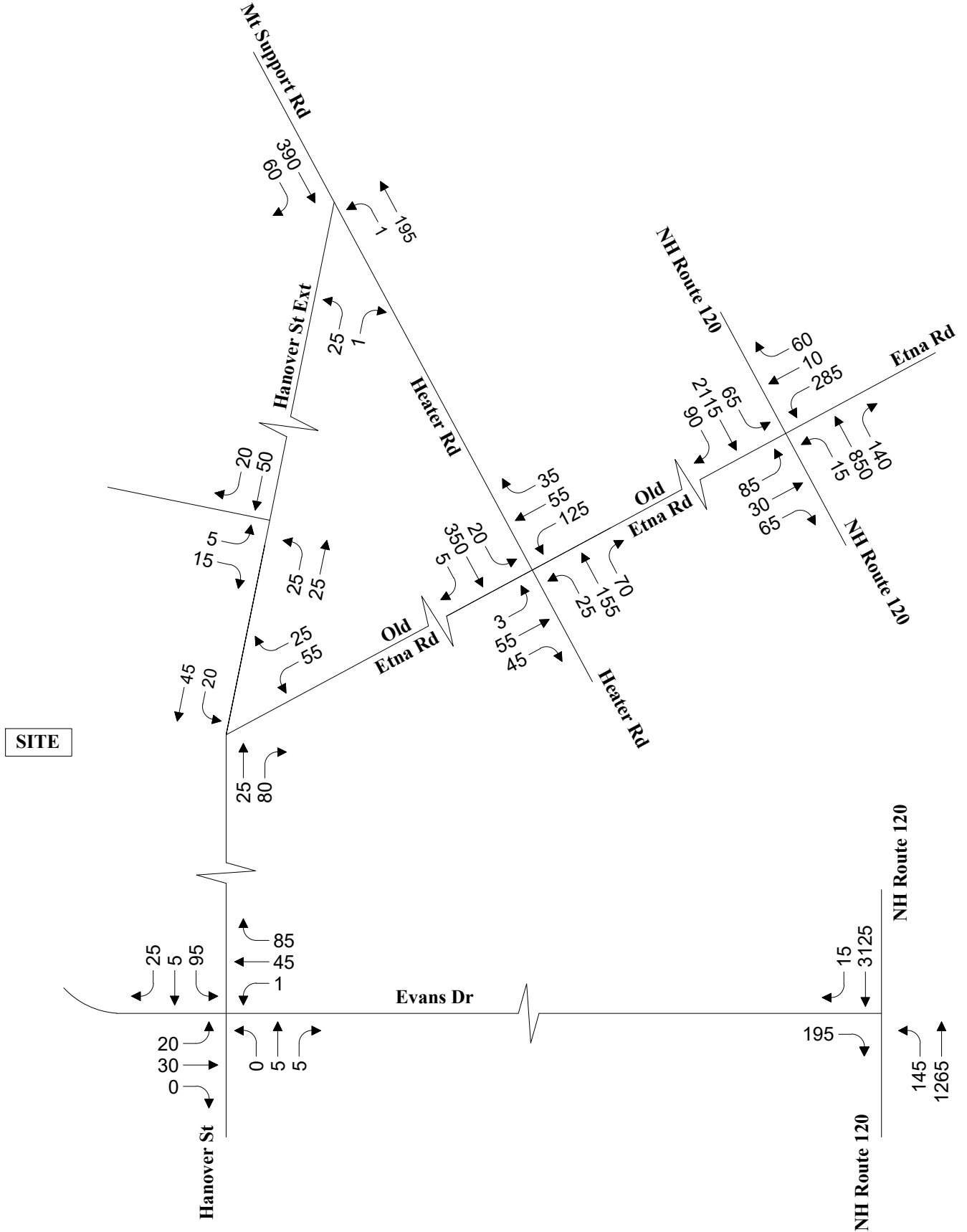
Not to Scale



2035 Build Weekday Morning Peak Hour Traffic Volumes

Figure 17





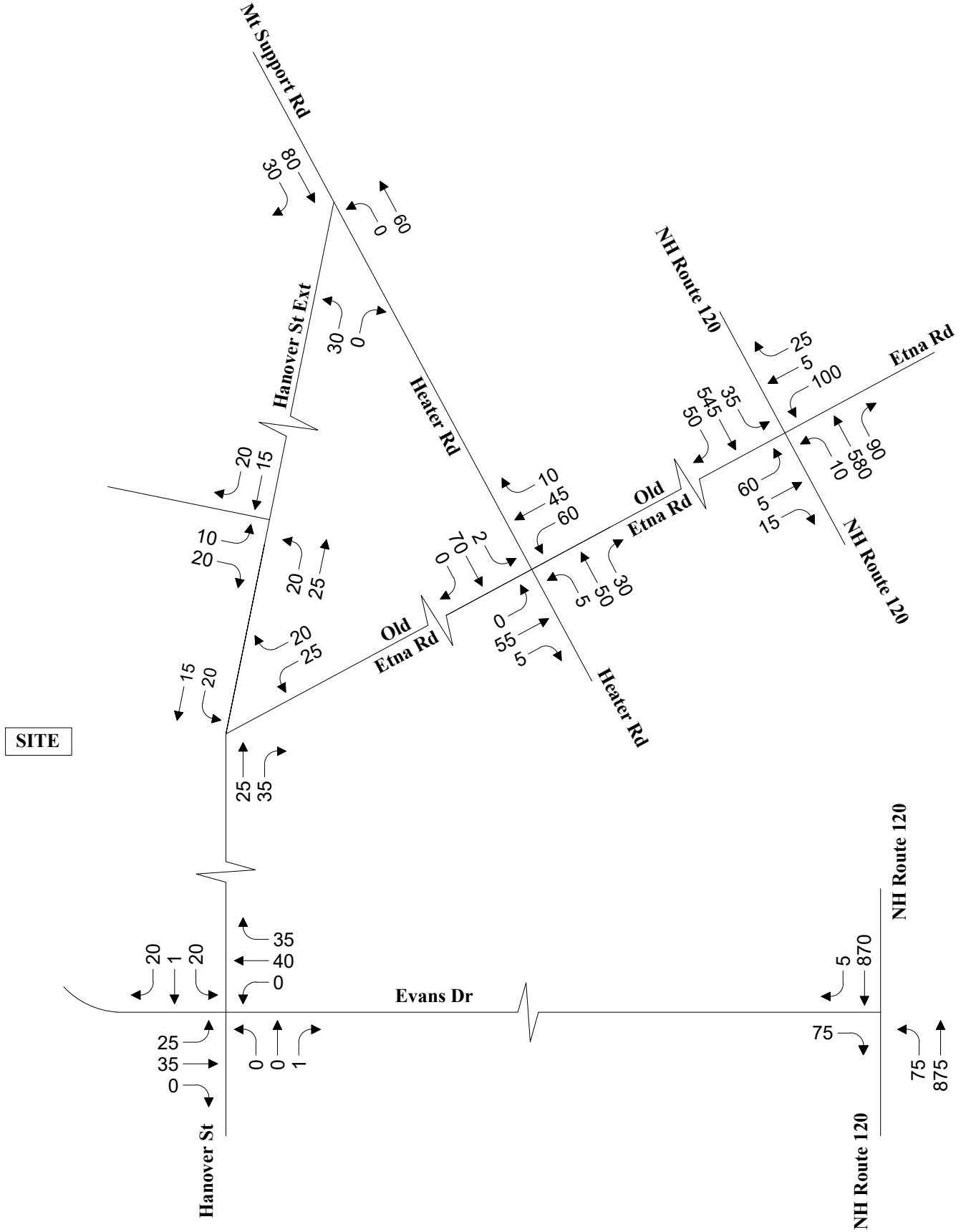
Not to Scale



2035 Build Weekday Evening  
Peak Hour Traffic Volumes

**Figure 18**





Not to Scale



2035 Build Saturday Midday  
Peak Hour Traffic Volumes

**Figure 19**



## Capacity and Queue Analyses

Capacity and queue analyses were performed for the study area intersections to examine operations under future traffic volume conditions without the development (2025 and 2035 No-Build) and with the development (2025 and 2035 Build) during the weekday AM, weekday PM, and Saturday midday peak hours. A summary of the 2025 traffic volume operations is reflected in Table 7 and the 2035 analyses are summarized in Table 8. The capacity analysis worksheets are provided in the Appendix.

The peak hour factor (PHF) is a measure of traffic demand fluctuations within the peak hour. As traffic volumes and patterns change within the design horizons, the concentration of traffic volumes is not anticipated to remain stagnant. In conformance with NHDOT Bureau of Traffic's guidelines for intersection analyses, existing PHFs were increased to 0.90 for the 2035 No-Build and Build traffic volume conditions.<sup>27</sup> For those approaches where existing PHFs were observed to be above 0.90, the PHFs were used as observed without a reduction.

The 2035 future traffic volume operations include the NHDOT corridor project (Lebanon 29612) along NH Route 120 corridor between Hanover Street and Old Etna Road/Etna Road. Of importance to note, the intersection operations may reflect longer delays and queues within this Traffic Impact Study as compared to other evaluations conducted as part of that roadway project or other planning studies in the area due to different parameters required in developing traffic volumes. For example, transportation studies supporting public roadway improvement projects typically use average-month factors, may not apply pre-pandemic adjustment factors, and use calculated historical growth percentages. In comparison, land development traffic impact studies for private development in New Hampshire are required to analyze peak-month conditions, apply factors to account for the pandemic, and use no less than a 1 percent compounded annual growth rate in developing future traffic volumes which can result in higher traffic volumes and produce worse intersection operating results.

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<sup>27</sup> Ibid. 8.



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street and Evans Drive</b>                      |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | >1.20      | >100  | F   | --              | 390             |
| Evans Dr WB Approach                                       | 0.98          | 44.8  | E   | --              | 425             | 1.09       | 80.4  | F   | --              | 612             |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.20          | 7.8   | A   | --              | 18              | 0.20       | 7.8   | A   | --              | 18              |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.11       | 12.9  | B   | --              | 10              |
| Evans Dr WB Approach                                       | 0.09          | 8.8   | A   | --              | 8               | 0.19       | 10.7  | B   | --              | 18              |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.08          | 7.4   | A   | --              | 8               | 0.08       | 7.4   | A   | --              | 8               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.09       | 10.2  | B   | --              | 8               |
| Evans Dr WB Approach                                       | 0.04          | 8.5   | A   | --              | 2               | 0.12       | 9.6   | A   | --              | 10              |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.02          | 7.2   | A   | --              | 2               | 0.02       | 7.2   | A   | --              | 2               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted or projected on this movement.



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street and Old Etna Road</b>                    |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.31          | 11.9  | B   | --              | 32              | 0.42       | 14.9  | B   | --              | 52              |
| Hanover St SB Left                                         | 0.00          | 7.9   | A   | --              | 0               | 0.04       | 8.1   | A   | --              | 2               |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.05          | 9.4   | A   | --              | 2               | 0.12       | 10.0  | B   | --              | 5               |
| Hanover St SB Left                                         | 0.00          | 7.5   | A   | --              | 0               | 0.02       | 7.6   | A   | --              | 2               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.01          | 8.8   | A   | --              | 0               | 0.08       | 9.3   | A   | --              | 8               |
| Hanover St SB Left                                         | 0.00          | 0.0   | A   | --              | 0               | 0.02       | 7.4   | A   | --              | 2               |
| <b>Hanover Street and North Site Driveway</b>              |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.05       | 9.0   | A   | --              | 5               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.01       | 7.3   | A   | --              | 0               |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.02       | 8.9   | A   | --              | 2               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.02       | 7.4   | A   | --              | 2               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.03       | 8.8   | A   | --              | 2               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.01       | 7.3   | A   | --              | 0               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group           | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|----------------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                                      | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street Extension, Heater Road, and Mount Support Road</b> |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                                    |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.15          | 13.5  | B   | --              | 12              | 0.22       | 14.4  | A   | --              | 20              |
| Heater Rd NB Left                                                    | 0.00          | 7.9   | A   | --              | 0               | 0.00       | 8.0   | A   | --              | 0               |
| <i>Weekday PM</i>                                                    |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.05          | 14.7  | B   | --              | 5               | 0.12       | 15.9  | C   | --              | 10              |
| Heater Rd NB Left                                                    | 0.00          | 8.7   | A   | --              | 0               | 0.00       | 8.8   | A   | --              | 0               |
| <i>Saturday Midday</i>                                               |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.02          | 9.6   | A   | --              | 2               | 0.05       | 9.8   | A   | --              | 5               |
| Heater Rd NB Left <sup>a</sup>                                       | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted or projected on this movement.



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Old Etna Road and Heater Road</b>                       |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.46          | 14.8  | B   | --              | 60              | 0.66       | 22.4  | C   | --              | 120             |
| Old Etna Rd WB Approach                                    | 0.41          | 14.3  | B   | --              | 48              | 0.48       | 17.1  | C   | --              | 62              |
| Heater Rd NB Approach                                      | 0.67          | 21.2  | C   | --              | 128             | 0.75       | 27.7  | D   | --              | 160             |
| Heater Rd SB Approach                                      | 0.55          | 17.1  | C   | --              | 82              | 0.61       | 20.9  | C   | --              | 100             |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.24          | 11.3  | B   | --              | 22              | 0.40       | 14.3  | B   | --              | 45              |
| Old Etna Rd WB Approach                                    | 0.33          | 12.8  | B   | --              | 35              | 0.45       | 15.8  | C   | --              | 58              |
| Heater Rd NB Approach                                      | 0.52          | 14.8  | B   | --              | 75              | 0.58       | 18.0  | C   | --              | 92              |
| Heater Rd SB Approach                                      | 0.76          | 23.8  | C   | --              | 172             | 0.85       | 34.7  | D   | --              | 228             |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.03          | 7.3   | A   | --              | 2               | 0.11       | 8.0   | A   | --              | 10              |
| Old Etna Rd WB Approach                                    | 0.11          | 8.0   | A   | --              | 10              | 0.18       | 8.5   | A   | --              | 15              |
| Heater Rd NB Approach                                      | 0.12          | 7.6   | A   | --              | 10              | 0.13       | 8.0   | A   | --              | 12              |
| Heater Rd SB Approach                                      | 0.10          | 7.7   | A   | --              | 8               | 0.10       | 8.1   | A   | --              | 8               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.90          | >100  | F   | 95              | 169             | >1.20      | >100  | F   | 218             | 309             |
| Old Etna Rd EB Through/Right                               | 0.98          | >100  | F   | 98              | 186             | 0.81       | 91.0  | F   | 96              | 164             |
| Etna Rd WB Left                                            | 0.86          | >100  | F   | 106             | 224             | 0.95       | >100  | F   | 107             | 235             |
| Etna Rd WB Left/Through/Right                              | 0.90          | >100  | F   | 112             | 247             | 0.99       | >100  | F   | 113             | 259             |
| Etna Rd WB Right                                           | 0.05          | 47.7  | D   | 0               | 43              | 0.05       | 48.5  | D   | 0               | 43              |
| NH Route 120 NB Left                                       | 0.62          | 74.6  | E   | 47              | 88              | 0.62       | 74.6  | E   | 47              | 88              |
| NH Route 120 NB Through                                    | 1.19          | >100  | F   | 1,536           | 1,536           | 1.20       | >100  | F   | 1,549           | 1,549           |
| NH Route 120 NB Right                                      | 0.23          | 7.2   | A   | 5               | 15              | 0.24       | 7.9   | A   | 8               | 19              |
| NB Route 120 SB Left                                       | 0.59          | 70.0  | E   | 52              | 97              | 0.59       | 70.0  | E   | 52              | 97              |
| NH Route 120 SB Through/Right                              | 0.39          | 12.7  | B   | 193             | 224             | 0.40       | 13.4  | B   | 203             | 234             |
| Overall Intersection                                       | 1.10          | 85.7  | F   | --              | --              | 1.15       | 95.1  | F   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.49          | 64.7  | E   | 48              | 84              | 0.64       | 69.4  | E   | 81              | 127             |
| Old Etna Rd EB Through/Right                               | 0.36          | 63.7  | E   | 29              | 76              | 0.29       | 61.3  | E   | 29              | 75              |
| Etna Rd WB Left                                            | 0.76          | 71.9  | E   | 149             | 215             | 0.77       | 73.1  | E   | 149             | 217             |
| Etna Rd WB Left/Through/Right                              | 0.78          | 75.7  | E   | 156             | 225             | 0.80       | 77.6  | E   | 156             | 227             |
| Etna Rd WB Right                                           | 0.04          | 41.6  | D   | 0               | 24              | 0.04       | 41.7  | D   | 0               | 25              |
| NH Route 120 NB Left                                       | 0.46          | 71.3  | E   | 14              | 40              | 0.46       | 71.3  | E   | 14              | 40              |
| NH Route 120 NB Through                                    | 0.40          | 16.9  | B   | 211             | 310             | 0.41       | 18.1  | B   | 222             | 310             |
| NH Route 120 NB Right                                      | 0.08          | 6.5   | A   | 0               | 10              | 0.08       | 7.3   | A   | 0               | 11              |
| NB Route 120 SB Left                                       | 0.55          | 67.0  | E   | 56              | 105             | 0.55       | 67.0  | E   | 56              | 105             |
| NH Route 120 SB Through/Right                              | 0.92          | 31.1  | C   | 665             | 1,237           | 0.97       | 39.8  | D   | 761             | 1,292           |
| Overall Intersection                                       | 0.87          | 33.2  | C   | --              | --              | 0.92       | 38.8  | D   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.30          | 66.5  | E   | 18              | 38              | 0.64       | 72.8  | E   | 66              | 95              |
| Old Etna Rd EB Through/Right                               | 0.13          | 65.4  | E   | 6               | 29              | 0.08       | 61.7  | E   | 6               | 28              |
| Etna Rd WB Left                                            | 0.53          | 65.1  | E   | 54              | 101             | 0.53       | 65.1  | E   | 54              | 101             |
| Etna Rd WB Left/Through/Right                              | 0.54          | 65.7  | E   | 56              | 104             | 0.54       | 65.7  | E   | 56              | 104             |
| Etna Rd WB Right                                           | 0.02          | 50.2  | D   | 0               | 0               | 0.02       | 50.2  | D   | 0               | 0               |
| NH Route 120 NB Left                                       | 0.33          | 70.0  | E   | 10              | 32              | 0.33       | 70.0  | E   | 10              | 32              |
| NH Route 120 NB Through                                    | 0.24          | 8.8   | A   | 102             | 160             | 0.25       | 10.3  | B   | 113             | 180             |
| NH Route 120 NB Right                                      | 0.06          | 4.7   | A   | 0               | 7               | 0.06       | 5.7   | A   | 0               | 10              |
| NB Route 120 SB Left                                       | 0.41          | 66.6  | E   | 28              | 62              | 0.41       | 66.6  | E   | 28              | 62              |
| NH Route 120 SB Through/Right                              | 0.21          | 7.4   | A   | 62              | 135             | 0.24       | 8.9   | A   | 76              | 165             |
| Overall Intersection                                       | 0.28          | 17.0  | B   | --              | --              | 0.31       | 19.8  | B   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 7 Capacity Analysis Summary 2025 Opening Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2025 No-Build |       |     |                 |                 | 2025 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120 and Evans Drive</b>                        |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | 1.12          | >100  | F   | --              | 462             | 1.15       | >100  | F   | --              | 500             |
| Evans Dr EB Left <sup>a</sup>                              | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Evans Dr EB Right                                          | 0.80          | 42.8  | E   | --              | 178             | 1.04       | 88.4  | F   | --              | 330             |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | 0.87          | >100  | F   | --              | 125             | >1.20      | >100  | F   | --              | 235             |
| Evans Dr EB Left                                           | >1.20         | >100  | F   | --              | 332             | >1.20      | >100  | F   | --              | 435             |
| Evans Dr EB Right                                          | >1.20         | >100  | F   | --              | 332             | >1.20      | >100  | F   | --              | 435             |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | 0.04          | 9.6   | A   | --              | 2               | 0.09       | 9.9   | A   | --              | 8               |
| Evans Dr EB Left                                           | 0.04          | 30.4  | D   | --              | 2               | 0.05       | 35.0  | E   | --              | 2               |
| Evans Dr EB Right                                          | 0.07          | 11.5  | B   | --              | 5               | 0.14       | 12.0  | B   | --              | 12              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted or projected on this movement.



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street and Evans Drive <sup>a</sup></b>         |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.73       | 72.9  | F   | --              | 112             |
| Evans Dr WB Approach                                       | 0.63          | 15.3  | C   | --              | 118             | 0.69       | 17.6  | C   | --              | 145             |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.15          | 7.7   | A   | --              | 12              | 0.15       | 7.7   | A   | --              | 12              |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.10       | 12.0  | B   | --              | 8               |
| Evans Dr WB Approach                                       | 0.09          | 8.7   | A   | --              | 8               | 0.17       | 10.2  | B   | --              | 15              |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.06          | 7.4   | A   | --              | 5               | 0.06       | 7.4   | A   | --              | 5               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| South Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.08       | 9.9   | A   | --              | 8               |
| Evans Dr WB Approach                                       | 0.04          | 8.5   | A   | --              | 2               | 0.09       | 9.3   | A   | --              | 8               |
| Hanover St NB Left <sup>a</sup>                            | --            | --    | --  | --              | --              | --         | --    | --  | --              | --              |
| Hanover St SB Left                                         | 0.01          | 7.2   | A   | --              | 0               | 0.01       | 7.2   | A   | --              | 0               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

<sup>a</sup> No vehicles were counted or projected on this movement.



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street and Old Etna Road</b>                    |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.19          | 10.8  | B   | --              | 18              | 0.26       | 12.5  | B   | --              | 25              |
| Hanover St SB Left                                         | 0.00          | 7.8   | A   | --              | 0               | 0.03       | 8.1   | A   | --              | 2               |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.04          | 9.2   | A   | --              | 2               | 0.10       | 9.6   | A   | --              | 8               |
| Hanover St SB Left                                         | 0.00          | 7.4   | A   | --              | 0               | 0.02       | 7.5   | A   | --              | 0               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd WB Approach                                    | 0.01          | 8.7   | A   | --              | 0               | 0.05       | 9.1   | A   | --              | 5               |
| Hanover St SB Left                                         | 0.00          | 0.0   | A   | --              | 0               | 0.01       | 7.4   | A   | --              | 0               |
| <b>Hanover Street and North Site Driveway</b>              |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.05       | 9.0   | A   | --              | 5               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.01       | 7.3   | A   | --              | 0               |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.02       | 8.9   | A   | --              | 2               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.02       | 7.4   | A   | --              | 2               |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| North Site Driveway EB Approach                            | --            | --    | --  | --              | --              | 0.03       | 8.8   | A   | --              | 2               |
| Hanover St NB Left                                         | --            | --    | --  | --              | --              | 0.01       | 7.3   | A   | --              | 0               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group           | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|----------------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                                      | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Hanover Street Extension, Heater Road, and Mount Support Road</b> |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                                    |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.14          | 12.9  | B   | --              | 12              | 0.21       | 13.6  | B   | --              | 20              |
| Heater Rd NB Left                                                    | 0.00          | 7.8   | A   | --              | 0               | 0.00       | 7.8   | A   | --              | 0               |
| <i>Weekday PM</i>                                                    |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.03          | 13.4  | B   | --              | 2               | 0.07       | 14.0  | B   | --              | 5               |
| Heater Rd NB Left                                                    | 0.00          | 8.4   | A   | --              | 0               | 0.00       | 8.5   | A   | --              | 0               |
| <i>Saturday Midday</i>                                               |               |       |     |                 |                 |            |       |     |                 |                 |
| Hanover St Extension EB Approach                                     | 0.01          | 9.4   | A   | --              | 0               | 0.04       | 9.6   | A   | --              | 2               |
| Heater Rd NB Left                                                    | 0.00          | 0.0   | A   | --              | 0               | 0.00       | 0.0   | A   | --              | 0               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>Old Etna Road and Heater Road</b>                       |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.32          | 11.7  | B   | --              | 35              | 0.45       | 13.9  | B   | --              | 58              |
| Old Etna Rd WB Approach                                    | 0.36          | 12.5  | B   | --              | 40              | 0.41       | 13.6  | B   | --              | 50              |
| Heater Rd NB Approach                                      | 0.61          | 17.1  | C   | --              | 105             | 0.60       | 17.6  | C   | --              | 100             |
| Heater Rd SB Approach                                      | 0.37          | 11.7  | B   | --              | 42              | 0.40       | 13.5  | B   | --              | 48              |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.13          | 9.6   | A   | --              | 10              | 0.19       | 10.6  | B   | --              | 18              |
| Old Etna Rd WB Approach                                    | 0.29          | 11.4  | B   | --              | 30              | 0.38       | 12.9  | B   | --              | 45              |
| Heater Rd NB Approach                                      | 0.40          | 11.7  | B   | --              | 48              | 0.43       | 12.8  | B   | --              | 52              |
| Heater Rd SB Approach                                      | 0.60          | 15.5  | C   | --              | 100             | 0.63       | 17.5  | C   | --              | 112             |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Approach                                    | 0.03          | 7.3   | A   | --              | 2               | 0.08       | 7.8   | A   | --              | 8               |
| Old Etna Rd WB Approach                                    | 0.10          | 7.8   | A   | --              | 8               | 0.16       | 8.3   | A   | --              | 15              |
| Heater Rd NB Approach                                      | 0.10          | 7.4   | A   | --              | 8               | 0.11       | 7.8   | A   | --              | 10              |
| Heater Rd SB Approach                                      | 0.09          | 7.7   | A   | --              | 8               | 0.10       | 8.0   | A   | --              | 8               |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.87          | >100  | F   | 92              | 203             | >1.20      | >100  | F   | 194             | 347             |
| Old Etna Rd EB Through                                     | 0.24          | 62.5  | E   | 25              | 50              | 0.22       | 61.5  | E   | 25              | 49              |
| Old Etna Rd EB Right                                       | 0.05          | 54.2  | D   | 0               | 40              | 0.05       | 53.4  | D   | 0               | 40              |
| Etna Rd WB Left                                            | 0.86          | 89.9  | F   | 96              | 168             | 0.86       | 89.9  | F   | 96              | 168             |
| Etna Rd WB Through                                         | 0.29          | 62.1  | E   | 33              | 71              | 0.29       | 62.1  | E   | 33              | 71              |
| Etna Rd WB Right                                           | 0.08          | 48.8  | D   | 7               | 54              | 0.08       | 48.8  | D   | 7               | 54              |
| NH Route 120 NB Left                                       | 0.54          | 67.2  | E   | 50              | 97              | 0.54       | 67.2  | E   | 50              | 97              |
| NH Route 120 NB Through                                    | >1.20         | >100  | F   | 1,661           | 1,778           | >1.20      | >100  | F   | 1,674           | 1,791           |
| NH Route 120 NB Right                                      | 0.25          | 7.4   | A   | 7               | 21              | 0.26       | 7.7   | A   | 9               | 23              |
| NB Route 120 SB Left                                       | 0.60          | 71.3  | E   | 55              | 105             | 0.60       | 71.3  | E   | 55              | 105             |
| NH Route 120 SB Through/Right                              | 0.41          | 13.2  | B   | 203             | 253             | 0.43       | 13.9  | B   | 213             | 266             |
| Overall Intersection                                       | 1.13          | 94.0  | F   | --              | --              | 1.18       | >100  | F   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.57          | 68.5  | E   | 55              | 104             | 0.78       | 88.4  | F   | 85              | 177             |
| Old Etna Rd EB Through                                     | 0.15          | 62.5  | E   | 15              | 33              | 0.14       | 61.5  | E   | 15              | 33              |
| Old Etna Rd EB Right                                       | 0.06          | 57.6  | E   | 1               | 39              | 0.06       | 56.6  | E   | 1               | 39              |
| Etna Rd WB Left                                            | 0.90          | 85.3  | F   | 150             | 254             | 0.97       | >100  | F   | 152             | 254             |
| Etna Rd WB Through                                         | 0.06          | 56.5  | E   | 9               | 30              | 0.06       | 57.5  | E   | 9               | 30              |
| Etna Rd WB Right                                           | 0.04          | 43.9  | D   | 0               | 39              | 0.04       | 44.8  | D   | 0               | 39              |
| NH Route 120 NB Left                                       | 0.25          | 66.5  | E   | 14              | 40              | 0.25       | 66.5  | E   | 14              | 40              |
| NH Route 120 NB Through                                    | 0.42          | 15.6  | B   | 223             | 278             | 0.42       | 15.6  | B   | 223             | 278             |
| NH Route 120 NB Right                                      | 0.09          | 6.6   | A   | 0               | 10              | 0.09       | 6.9   | A   | 0               | 10              |
| NB Route 120 SB Left                                       | 0.59          | 68.6  | E   | 60              | 112             | 0.59       | 68.6  | E   | 60              | 112             |
| NH Route 120 SB Through/Right                              | 0.99          | 43.4  | D   | 1,017           | 1,267           | 1.02       | 49.8  | D   | 1,158           | 1,316           |
| Overall Intersection                                       | 0.95          | 40.4  | D   | --              | --              | 0.99       | 46.2  | D   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120, Old Etna Road, and Etna Road</b>          |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| Old Etna Rd EB Left                                        | 0.40          | 68.2  | E   | 20              | 49              | 0.61       | 71.1  | E   | 60              | 109             |
| Old Etna Rd EB Through                                     | 0.05          | 65.9  | E   | 2               | 10              | 0.03       | 61.8  | E   | 2               | 10              |
| Old Etna Rd EB Right                                       | 0.01          | 62.2  | E   | 0               | 0               | 0.01       | 58.3  | E   | 0               | 0               |
| Etna Rd WB Left                                            | 0.52          | 64.2  | E   | 51              | 82              | 0.52       | 64.2  | E   | 51              | 82              |
| Etna Rd WB Through                                         | 0.05          | 61.5  | E   | 5               | 20              | 0.05       | 61.5  | E   | 5               | 20              |
| Etna Rd WB Right                                           | 0.02          | 50.3  | D   | 0               | 0               | 0.02       | 50.3  | D   | 0               | 0               |
| NH Route 120 NB Left                                       | 0.23          | 67.7  | E   | 10              | 32              | 0.23       | 67.7  | E   | 10              | 32              |
| NH Route 120 NB Through                                    | 0.26          | 8.6   | A   | 115             | 174             | 0.27       | 10.3  | B   | 126             | 193             |
| NH Route 120 NB Right                                      | 0.06          | 4.5   | A   | 0               | 8               | 0.06       | 5.7   | A   | 0               | 9               |
| NB Route 120 SB Left                                       | 0.44          | 66.5  | E   | 32              | 69              | 0.44       | 66.5  | E   | 32              | 69              |
| NH Route 120 SB Through/Right                              | 0.23          | 7.4   | A   | 96              | 144             | 0.26       | 9.2   | A   | 113             | 173             |
| Overall Intersection                                       | 0.30          | 16.2  | B   | --              | --              | 0.32       | 18.9  | B   | --              | --              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



**Table 8 Capacity Analysis Summary 2035 Design Year Conditions (continued)**

| Intersection/Peak Hour/<br>Critical Movement or Lane Group | 2035 No-Build |       |     |                 |                 | 2035 Build |       |     |                 |                 |
|------------------------------------------------------------|---------------|-------|-----|-----------------|-----------------|------------|-------|-----|-----------------|-----------------|
|                                                            | v/c           | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue | v/c        | Delay | LOS | 50th %<br>Queue | 95th %<br>Queue |
| <b>NH Route 120 and Evans Drive</b>                        |               |       |     |                 |                 |            |       |     |                 |                 |
| <i>Weekday AM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | > 1.20        | > 100 | F   | --              | 1,308           | > 1.20     | > 100 | F   | --              | 1,375           |
| Evans Dr EB Right                                          | 0.93          | 73.8  | F   | --              | 225             | 1.15       | > 100 | F   | --              | 365             |
| <i>Weekday PM</i>                                          |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | > 1.20        | > 100 | F   | --              | 320             | > 1.20     | > 100 | F   | --              | 462             |
| Evans Dr EB Right                                          | > 1.20        | > 100 | F   | --              | 445             | > 1.20     | > 100 | F   | --              | 545             |
| <i>Saturday Midday</i>                                     |               |       |     |                 |                 |            |       |     |                 |                 |
| NH Route 120 NB Left                                       | 0.08          | 13.9  | B   | --              | 8               | 0.10       | 10.3  | B   | --              | 8               |
| Evans Dr EB Right                                          | 0.08          | 13.2  | B   | --              | 8               | 0.15       | 12.5  | B   | --              | 12              |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).



## Hanover Street, Evans Drive, and South Site Driveway

As previously described, long delays are currently experienced along the Evans Drive westbound approach at the unsignalized intersection with Hanover Street during the weekday AM peak hour. These delays are common near schools during the student arrival time period. Delays may be shown to improve with the 2035 traffic volumes as compared with the 2025 traffic volumes due to the PHF modifications in compliance with NHDOT guidelines. Under Build traffic-volume conditions, the south site driveway will be constructed as the fourth (west) leg to the unsignalized intersection. As part of the proposed development, measures have been evaluated to improve intersection operations (discussed below).

## Hanover Street and Old Etna Road

Based on the 2025 and 2035 No-Build and Build traffic volume conditions, the minor street approaches at the Hanover Street and Old Etna Road unsignalized intersection are projected to operate at LOS B or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of the estimated site trips, capacity is shown to be available as the v/c ratios are well below 1.00.

## Hanover Street Extension and North Site Driveway

The critical movements at the proposed north site driveway unsignalized intersection with Hanover Street Extension are projected to operate at LOS A during the weekday AM, weekday PM, and Saturday midday peak hours.

## Hanover Street Extension, Heater Road, and Mount Support Road

Under 2025 and 2035 No-Build and Build traffic volume conditions, the Hanover Street Extension approach and the Heater Road northbound left turns at the unsignalized intersection with Mount Support Road are estimated to operate at LOS C or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of site trips added to the roadway network, delay increases are projected to be negligible (<1 second) during the peak hours.

## Old Etna Road and Heater Road

Delays at the Heater Road and Old Etna Road All-Way Stop-Control (AWSC) intersection may be shown to improve with the 2035 traffic volumes as compared with the 2025 traffic volumes due to the PHF modifications in compliance with NHDOT guidelines. Based on the 2035 No-Build and Build traffic volume conditions, the minor street approaches to the unsignalized intersection are projected to operate at LOS D or better during the weekday AM, weekday PM, and Saturday midday peak hours. With the addition of the site trips through this intersection during the 2035 traffic volume conditions, increases in delays are anticipated to minimal ( $\leq 2.2$  seconds) and capacity is shown to be available as the v/c ratios are below 1.00.

## NH Route 120, Old Etna Road, and Etna Road

As previously described, the NH Route 120 signalized intersection with Old Etna Road and Etna Road is contained within a traffic signal system with the I-89 southbound ramps, I-89



northbound ramps, and Heater Road. Based on existing intersection operations, there are long delays experienced at the NH Route 120, Old Etna Road, Etna Road signalized intersection independent of future traffic growth associated with historical growth, background developments, and the proposed residential development. Since capacity constraints are shown with the 2022 Existing traffic volumes during the weekday AM peak hour, improvements deemed necessary at this location are separate from the proposed residential development. NHDOT officials are developing improvements along the NH Route 120 corridor (Lebanon 29612) between Hanover Street and Old Etna Road/Etna Road.

## NH Route 120 and Evans Drive

Under 2022 Existing traffic-volume conditions, long delays (LOS F) are experienced on the NH Route 120 northbound left-turn lane at the unsignalized intersection with Evans Drive during the weekday AM and PM peak hours. Long delays are also experienced on the Evans Drive minor street movements during the weekday PM peak hour due to the heavy demand of conflicting NH Route 120 traffic. Similar to the NH Route 120, Old Etna Road, and Etna Road intersection, improvements required at this location are being considered as part of the NHDOT corridor improvement project along NH Route 120 independent of the proposed residential development.

# Improvements

The final component of a traffic study is the identification of improvement measures that are expected to be effective in eliminating or improving anticipated deficiencies resulting from the combination of existing, background, and project-generated traffic. As discussed at the December 1, 2023 meeting with local, state, and regional representatives, City officials have considered installing AWSC at the Hanover Street and Evans Drive intersection. To determine if the Hanover Street, Evans Drive, and south site driveway should be placed under AWSC, a review was conducted of the Manual on Uniform Traffic Control Devices (MUTCD)<sup>28</sup> criteria. The AWSC criteria discussion included within this section is based on the 2009 edition of the MUTCD because the newest edition (11<sup>th</sup> Edition) was recently published in December 2023 and has not yet been accepted by NHDOT officials. The following summarizes the findings of the criteria being satisfied for MUTCD Section 2B.17 (AWSC Warrant E):

### › The need to control left-turn conflicts.<sup>29</sup>

- As shown on Figures 17 through 19 for the 2035 Build weekday AM, weekday PM, and Saturday midday peak hour traffic volumes:
  - There are projected to be between 20 and 45 vehicles turning left from the proposed site driveway onto Hanover Street northbound that would be in conflict with between 41 and 223 vehicles on the Hanover Street southbound approach and between 75 and 555 vehicles on the Evans Drive westbound approach.
  - There are projected to be between 20 and 210 vehicles turning left from Hanover Street southbound onto Evans Drive that would be in conflict with between 75 and

<sup>28</sup> Federal Highway Administration. Manual on Uniform Traffic Control Devices for Streets and Highways, 11th ed. Dec. 2023.

<sup>29</sup> MUTCD, Section 2B.17, Paragraph 1, Item A.



555 vehicles on the Evans Drive westbound approach and between 50 and 105 vehicles on the south site driveway eastbound approach.

- As reflected in Table 8, the site driveway approach to Hanover Street and Evans Drive is shown to operate with long delays (LOS F) with the 2035 No-Build weekday AM peak hour traffic volumes.
  - Therefore, the criterion of needing to control the left-turn conflicts would be met.
- › **An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where AWSC would improve traffic operational characteristics of the intersection.**<sup>30</sup>
- Hanover Street and Evans Drive are local roadways providing single lanes of vehicle travel in each direction and a sidewalk provided along one side of each roadway (i.e., along the east side of Hanover Street and along the north side of Evans Drive).
  - Based on 2035 Build conditions during the weekday AM, weekday PM, and Saturday midday peak hours (Figures 17 through 19), the Hanover Street southbound approach is projected to carry between 41 and 223 vehicles and the Evans Drive westbound approach estimated to carry between 75 and 555 vehicles.
  - The Hanover Street and Evans Drive intersection is in close proximity to Hanover Street Elementary School and Lebanon High School that generate motorized and non-motorized travel.
  - With the placement of the intersection under AWSC (as shown in Table 9), the intersection would be projected to operate with all approaches at LOS C or better.
  - Therefore, the criterion of two residential neighborhood collector (through) streets of similar design and operating characteristics where AWSC would improve traffic operations would be met.
- › **Where pedestrian and/or bicyclist movement support the installation of AWSC.**<sup>31</sup>
- The Hanover Street and Evans Drive intersection is in close proximity to Hanover Street Elementary School and Lebanon High School that generate motorized and non-motorized travel.
  - As reflected in the November 2022 traffic counts, the intersection captured:
    - 14 cyclists and 53 pedestrians crossing the intersection on a weekday between 7:00 and 8:00 AM.
    - 11 cyclists and 77 pedestrians crossing the intersection on a weekday between 2:00 and 3:00 PM.
    - 7 cyclists and 52 pedestrians crossing the intersection on a weekday between 3:00 and 4:00 PM.
    - 2 cyclists and 12 pedestrians crossing the intersection on a weekday between 4:00 and 5:00 PM.
  - Therefore, the non-motorized transportation movements may support the AWSC criterion.

<sup>30</sup> MUTCD, Section 2B.07, Paragraph 1, Item B.

<sup>31</sup> MUTCD, Section 2B.17, Paragraph 1, Item C.



Intersection analyses have been conducted with the Hanover Street, Evans Drive, and south site driveway intersection placed under AWSC. A summary of the 2035 traffic-volume operations with these improvements in place are reflected in Table 9. The capacity analysis worksheets are provided in the Appendix.

**Table 9 Capacity Analysis Summary: 2035 Build with Improvements**

| Intersection/<br>Peak Hour/Critical Movement | v/c  | Delay | LOS | 50 <sup>th</sup> %<br>Queue | 95 <sup>th</sup> %<br>Queue |
|----------------------------------------------|------|-------|-----|-----------------------------|-----------------------------|
| <b>Hanover Street and Evans Drive</b>        |      |       |     |                             |                             |
| <i>Weekday AM</i>                            |      |       |     |                             |                             |
| Site Driveway EB Approach                    | 0.18 | 9.7   | A   | --                          | 15                          |
| Evans Dr WB Approach                         | 0.72 | 17.5  | C   | --                          | 160                         |
| Hanover St NB Approach                       | 0.00 | 8.5   | A   |                             | 0                           |
| Hanover St SB Approach                       | 0.40 | 12.6  | B   | --                          | 48                          |
| <i>Weekday PM</i>                            |      |       |     |                             |                             |
| Site Driveway EB Approach                    | 0.07 | 7.9   | A   | --                          | 5                           |
| Evans Dr WB Approach                         | 0.16 | 7.7   | A   | --                          | 15                          |
| Hanover St NB Approach                       | 0.01 | 7.3   | A   |                             | 0                           |
| Hanover St SB Approach                       | 0.17 | 8.3   | A   | --                          | 15                          |
| <i>Saturday Midday</i>                       |      |       |     |                             |                             |
| Site Driveway EB Approach                    | 0.08 | 7.5   | A   | --                          | 5                           |
| Evans Dr WB Approach                         | 0.09 | 7.1   | A   | --                          | 8                           |
| Hanover St NB Approach                       | 0.00 | 6.7   | A   |                             | 0                           |
| Hanover St SB Approach                       | 0.05 | 7.2   | A   | --                          | 5                           |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

As shown, these improvements would result in operations on the four approaches at LOS C or better with the 2035 Build traffic volumes for the weekday AM, weekday PM, and Saturday midday peak hours. Accordingly, the installation of AWSC at this location may be desirable.

As detailed within this traffic study, the traffic volumes evaluated may represent an overestimated scenario that may not be realized along the local roadway system (application of peak-month and pandemic adjustments from NH Route 120). Therefore, the intersection operations presented within this traffic study may show worse conditions than will be realized. As such, the applicant of the proposed Lebanon Brickyard development is committed to installing the AWSC at this location should City of Lebanon officials deem this type of traffic control appropriate.

## Summary of Findings

Existing and future conditions in the study area have been described, analyzed, and evaluated with respect to traffic operations and the impact of the proposed Lebanon Brickyard residential development. Due to existing operational deficiencies along the NH Route 120 corridor, NHDOT



officials are developing improvements between Hanover Street (to the south) and Old Etna Road/Etna Road (to the north). The improvements are intended to improve operations, progression, and safety along the corridor that includes the I-89 interchange at Exit 18 (Lebanon 29612). Within the study area for the proposed Lebanon Brickyard residential development, improvements are being evaluated at the NH Route 120 intersections with Evans Drive and with Old Etna Road and Etna Road. These improvements may result in vehicles currently traveling along the Mount Support Road/Heater Road corridor changing their travel route onto the major highway system (NH Route 120 corridor).

Based on ITE methodologies and NHDOT guidance, a development may have an impact at an intersection if the addition of site trips increases traffic volumes at that location by 100 vehicles per hour or more. As detailed within this traffic study, the addition of site traffic through the study area intersections meets this threshold only at the Hanover Street, Evans Drive, and southern site driveway intersection. Therefore, improvements were evaluated to offset the impacts of the proposed residential development at this location. As described within this traffic study, the seasonal and pandemic adjustments used in developing the traffic volumes may result in worse intersection operations than will be realized along the local roadway system. Therefore, the applicant is committed to installing the AWSC at the Hanover Street, Evans Drive, and southern site driveway intersection should City of Lebanon officials deem this type of traffic control appropriate. As an interim condition, City officials may consider having the applicant install the AWSC as a temporary condition to understand the intersection operations prior to implementing a formal change to the traffic control.



## Appendix

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Traffic Count and Vehicle Speed Data  
Traffic-Volume Adjustment Data  
Advance Transit Bus Service Data  
Existing Intersection Analysis Worksheets  
Background Developments  
Trip-Generation and Distribution Calculations  
No-Build and Build Intersection Analysis Worksheets  
2034 Build Analysis Worksheets with Improvements  
School Dismissal Condition Data







## Traffic Count and Vehicle Speed Data

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**Accurate Counts**  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: WB,

52933001

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 2     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 0         | 0         | 0         | 0         | 0    | 3     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 4         | 1         | 2         | 1         | 2         | 1         | 0    | 13    |
| 6:00       | 0     | 0       | 0       | 0        | 1         | 2         | 7         | 20        | 23        | 12        | 6         | 3         | 0         | 1    | 75    |
| 7:00       | 0     | 0       | 0       | 1        | 2         | 24        | 77        | 127       | 77        | 34        | 15        | 2         | 2         | 0    | 361   |
| 8:00       | 0     | 0       | 0       | 1        | 0         | 3         | 12        | 17        | 24        | 15        | 8         | 2         | 0         | 1    | 83    |
| 9:00       | 0     | 0       | 0       | 0        | 1         | 1         | 4         | 8         | 14        | 2         | 3         | 1         | 0         | 0    | 34    |
| 10:00      | 0     | 0       | 0       | 0        | 1         | 1         | 2         | 11        | 11        | 7         | 3         | 0         | 0         | 0    | 36    |
| 11:00      | 0     | 0       | 0       | 0        | 1         | 3         | 3         | 16        | 15        | 6         | 1         | 2         | 0         | 0    | 47    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 1         | 4         | 9         | 12        | 8         | 9         | 3         | 2         | 0         | 0    | 48    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 3         | 13        | 14        | 20        | 6         | 3         | 2         | 1         | 0    | 62    |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 2         | 8         | 24        | 38        | 7         | 5         | 2         | 0         | 1    | 87    |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 2         | 8         | 12        | 8         | 14        | 2         | 0         | 0         | 0    | 46    |
| 4:00       | 0     | 0       | 0       | 0        | 3         | 1         | 5         | 16        | 15        | 5         | 4         | 0         | 1         | 1    | 51    |
| 5:00       | 0     | 0       | 1       | 0        | 0         | 0         | 2         | 14        | 9         | 8         | 3         | 1         | 3         | 0    | 41    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 1         | 4         | 4         | 6         | 4         | 7         | 0         | 0         | 0    | 26    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 2         | 3         | 5         | 4         | 2         | 1         | 0         | 1         | 0    | 18    |
| 8:00       | 0     | 0       | 0       | 1        | 0         | 2         | 0         | 4         | 4         | 0         | 1         | 0         | 0         | 0    | 12    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 2         | 3         | 0         | 1         | 0         | 0    | 6     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 3         | 1         | 2         | 0         | 0         | 0         | 0    | 7     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 1     |
| Total      | 0     | 0       | 1       | 3        | 10        | 51        | 160       | 314       | 283       | 139       | 66        | 20        | 9         | 4    | 1060  |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 20    |
|                      | 24    |
| Mean Speed (Average) | 24.6  |
| 10 MPH Pace Speed    | 18-27 |
| Number in Pace       | 800   |
| Percent in Pace      | 75.5% |
| Number > 27 MPH      | 238   |
| Percent > 27 MPH     | 22.5% |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: WB,

52933001

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 3     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 1     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 3         | 2         | 0         | 0         | 0         | 0    | 7     |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 4         | 7         | 6         | 6         | 4         | 3         | 1         | 1    | 32    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 1         | 6         | 5         | 12        | 8         | 5         | 1         | 1         | 0    | 39    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 4         | 5         | 8         | 2         | 2         | 1         | 0         | 0    | 22    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 1         | 4         | 6         | 8         | 9         | 3         | 0         | 0         | 0    | 31    |
| 10:00      | 0     | 0       | 1       | 0        | 0         | 2         | 2         | 3         | 7         | 8         | 1         | 1         | 2         | 0    | 27    |
| 11:00      | 0     | 0       | 0       | 0        | 1         | 0         | 7         | 7         | 4         | 1         | 2         | 1         | 0         | 0    | 23    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 0         | 7         | 4         | 8         | 5         | 6         | 1         | 1         | 0    | 32    |
| 1:00       | 0     | 0       | 0       | 0        | 1         | 2         | 4         | 7         | 10        | 2         | 0         | 1         | 2         | 0    | 29    |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 5         | 5         | 3         | 4         | 1         | 0         | 1         | 0    | 19    |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 4         | 4         | 4         | 1         | 1         | 1         | 0    | 17    |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 3         | 7         | 4         | 1         | 1         | 0         | 1    | 18    |
| 5:00       | 0     | 0       | 0       | 1        | 0         | 1         | 1         | 3         | 3         | 5         | 3         | 0         | 0         | 0    | 17    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 5         | 2         | 7         | 0         | 2         | 0         | 0    | 18    |
| 7:00       | 0     | 0       | 0       | 0        | 1         | 1         | 2         | 1         | 4         | 1         | 1         | 1         | 0         | 0    | 12    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 4         | 3         | 2         | 2         | 0         | 0         | 0    | 11    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 1         | 0         | 0         | 0         | 0    | 2     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 3         | 0         | 2         | 0         | 0         | 0    | 6     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 1       | 1        | 3         | 9         | 52        | 72        | 98        | 73        | 34        | 14        | 9         | 2    | 368   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 20    |
|                      | 50th  |
|                      | 25    |
|                      | 85th  |
|                      | 31    |
|                      | 95th  |
|                      | 34    |
| Mean Speed (Average) | 26.2  |
| 10 MPH Pace Speed    | 20-29 |
| Number in Pace       | 260   |
| Percent in Pace      | 70.7% |
| Number > 27 MPH      | 132   |
| Percent > 27 MPH     | 35.9% |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: WB,

52933001

| 11/12/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 2         | 4         | 2         | 0         | 1         | 0    | 11    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 3         | 0         | 0         | 0         | 1         | 0    | 4     |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 3         | 5         | 3         | 2         | 2         | 1         | 0    | 18    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 2         | 4         | 7         | 11        | 5         | 1         | 1         | 0         | 1    | 32    |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 7         | 7         | 2         | 3         | 1         | 1         | 0    | 22    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 1         | 5         | 5         | 5         | 4         | 2         | 2         | 0         | 0    | 24    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 1         | 4         | 3         | 4         | 1         | 0         | 0    | 15    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 3         | 4         | 7         | 5         | 2         | 1         | 1         | 0    | 23    |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 5         | 7         | 1         | 0         | 1         | 0    | 16    |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 3         | 5         | 0         | 1         | 1         | 0         | 3    | 15    |
| 4:00       | 0     | 0       | 1       | 0        | 0         | 0         | 2         | 3         | 8         | 3         | 1         | 2         | 0         | 1    | 21    |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 6         | 7         | 4         | 2         | 2         | 0         | 1    | 24    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 8         | 2         | 3         | 1         | 1         | 0         | 0    | 16    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 3         | 3         | 0         | 1         | 0         | 0    | 8     |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 3         | 0         | 0         | 0         | 0    | 4     |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 3         | 2         | 1         | 2         | 0         | 0         | 0    | 10    |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 2         | 3         | 2         | 0         | 0         | 0         | 0    | 8     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 1     |
| Total      | 0     | 0       | 1       | 0        | 0         | 8         | 26        | 57        | 80        | 52        | 24        | 15        | 6         | 6    | 275   |

|                      |       |      |      |      |
|----------------------|-------|------|------|------|
| Percentile           | 15th  | 50th | 85th | 95th |
| Speed                | 21    | 25   | 32   | 35   |
| Mean Speed (Average) | 28.5  |      |      |      |
| 10 MPH Pace Speed    | 20-29 |      |      |      |
| Number in Pace       | 197   |      |      |      |
| Percent in Pace      | 71.6% |      |      |      |
| Number > 27 MPH      | 103   |      |      |      |
| Percent > 27 MPH     | 37.5% |      |      |      |

|                      |       |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
|----------------------|-------|------|------|------|----|----|-----|-----|-----|-----|-----|----|----|----|------|
| Grand Total          | 0     | 0    | 3    | 4    | 13 | 68 | 238 | 443 | 461 | 264 | 124 | 49 | 24 | 12 | 1703 |
| Stats                |       |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| Percentile           | 15th  | 50th | 85th | 95th |    |    |     |     |     |     |     |    |    |    |      |
| Speed                | 21    | 25   | 31   | 34   |    |    |     |     |     |     |     |    |    |    |      |
| Mean Speed (Average) | 27.2  |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| 10 MPH Pace Speed    | 20-29 |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| Number in Pace       | 1246  |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| Percent in Pace      | 73.2% |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| Number > 27 MPH      | 1244  |      |      |      |    |    |     |     |     |     |     |    |    |    |      |
| Percent > 27 MPH     | 38.5% |      |      |      |    |    |     |     |     |     |     |    |    |    |      |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: EB,

52933001

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 1         | 0         | 0         | 1         | 0    | 3     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 0         | 1         | 0         | 0         | 0    | 3     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 2         | 0         | 0         | 0         | 0    | 3     |
| 6:00       | 0     | 0       | 0       | 1        | 0         | 3         | 0         | 2         | 3         | 6         | 4         | 0         | 1         | 0    | 20    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 5         | 9         | 16        | 51        | 41        | 13        | 5         | 1         | 1    | 142   |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 2         | 0         | 4         | 13        | 26        | 13        | 2         | 1         | 1    | 62    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 1         | 3         | 0         | 11        | 6         | 4         | 2         | 1         | 0    | 28    |
| 10:00      | 0     | 0       | 0       | 0        | 3         | 1         | 3         | 6         | 9         | 6         | 4         | 4         | 1         | 1    | 38    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 1         | 2         | 5         | 17        | 18        | 13        | 5         | 0         | 2    | 63    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 5         | 23        | 11        | 5         | 3         | 1         | 1    | 50    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 10        | 11        | 19        | 11        | 3         | 2         | 0    | 57    |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 1         | 5         | 24        | 43        | 35        | 21        | 9         | 2         | 2    | 142   |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 1         | 8         | 28        | 34        | 23        | 17        | 3         | 3         | 2    | 119   |
| 4:00       | 0     | 0       | 0       | 0        | 2         | 0         | 7         | 16        | 22        | 16        | 7         | 4         | 2         | 1    | 77    |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 1         | 2         | 11        | 27        | 21        | 6         | 3         | 1         | 1    | 73    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 2         | 1         | 4         | 5         | 3         | 5         | 1         | 1         | 1    | 23    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 3         | 3         | 2         | 2         | 0         | 0    | 11    |
| 8:00       | 0     | 0       | 0       | 0        | 1         | 0         | 1         | 7         | 10        | 4         | 4         | 1         | 0         | 0    | 28    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 2         | 0         | 0         | 1         | 0         | 0    | 5     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 1         | 0         | 0         | 0         | 0    | 2     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 0         | 1         | 0         | 0         | 0    | 3     |
| Total      | 0     | 0       | 0       | 1        | 6         | 18        | 45        | 143       | 288       | 242       | 132       | 48        | 18        | 13   | 954   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 22    |
|                      | 50th  |
|                      | 27    |
|                      | 85th  |
|                      | 31    |
|                      | 95th  |
|                      | 34    |
| Mean Speed (Average) | 28.5  |
| 10 MPH Pace Speed    | 21-30 |
| Number in Pace       | 714   |
| Percent in Pace      | 74.8% |
| Number > 27 MPH      | 453   |
| Percent > 27 MPH     | 47.5% |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: EB,

52933001

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 2         | 0         | 1         | 0         | 0         | 0    | 3     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 1         | 1         | 1         | 0         | 0         | 0    | 4     |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 0         | 2         | 1         | 0         | 0         | 0    | 4     |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 3         | 5         | 2         | 2         | 1         | 1         | 0    | 14    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 5         | 1         | 1         | 1         | 0    | 11    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 7         | 8         | 6         | 1         | 1         | 0    | 25    |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 3         | 5         | 9         | 8         | 5         | 1         | 0         | 2    | 33    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 1         | 2         | 4         | 5         | 8         | 4         | 3         | 1         | 2    | 30    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 4         | 12        | 6         | 10        | 0         | 0         | 1    | 34    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 5         | 5         | 6         | 5         | 3         | 1         | 0    | 27    |
| 2:00       | 0     | 0       | 0       | 0        | 1         | 1         | 1         | 3         | 6         | 14        | 4         | 2         | 1         | 0    | 33    |
| 3:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 3         | 9         | 11        | 4         | 2         | 3         | 0    | 33    |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 9         | 8         | 9         | 7         | 3         | 3         | 1    | 40    |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 4         | 9         | 10        | 4         | 0         | 0         | 0    | 27    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 2         | 5         | 2         | 6         | 1         | 0         | 0    | 17    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 3         | 0         | 1         | 1         | 1         | 0    | 8     |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 3         | 1         | 0         | 1         | 0         | 0    | 6     |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0    | 2     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 1         | 0         | 0         | 0         | 0    | 4     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 0       | 0        | 3         | 6         | 12        | 49        | 93        | 94        | 62        | 21        | 13        | 6    | 359   |

|                      |       |      |      |      |
|----------------------|-------|------|------|------|
| Percentile           | 15th  | 50th | 85th | 95th |
| Speed                | 24    | 27   | 32   | 36   |
| Mean Speed (Average) | 29.5  |      |      |      |
| 10 MPH Pace Speed    | 23-32 |      |      |      |
| Number in Pace       | 265   |      |      |      |
| Percent in Pace      | 73.8% |      |      |      |
| Number > 27 MPH      | 196   |      |      |      |
| Percent > 27 MPH     | 54.6% |      |      |      |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: EB,

52933001

| 11/12/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 2         | 0         | 0         | 0         | 0    | 2     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 2     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 1         | 0         | 0    | 2     |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 3         | 1         | 0         | 0         | 0    | 7     |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 2         | 3         | 1         | 0         | 2         | 1         | 0    | 10    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 3         | 6         | 4         | 7         | 3         | 1         | 0    | 24    |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 7         | 3         | 7         | 0         | 4         | 1    | 23    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 1         | 2         | 3         | 6         | 3         | 3         | 0         | 0         | 0    | 18    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 3         | 5         | 1         | 0         | 0         | 1    | 11    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 3         | 5         | 9         | 2         | 3         | 0         | 0    | 23    |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 3         | 2         | 0         | 2         | 1    | 9     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 3         | 2         | 0         | 1         | 1         | 1    | 10    |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 2         | 1         | 0         | 0         | 0    | 6     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 1         | 1         | 2         | 4         | 2         | 0         | 1    | 13    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 8         | 4         | 7         | 5         | 0         | 1         | 0    | 27    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 2         | 3         | 2         | 1         | 0    | 11    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 1         | 1         | 0         | 2         | 0         | 0    | 5     |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 1         | 1         | 0         | 1         | 0    | 5     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 0       | 0        | 0         | 2         | 11        | 27        | 49        | 52        | 37        | 16        | 12        | 5    | 211   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 23    |
| Mean Speed (Average) | 30.8  |
| 10 MPH Pace Speed    | 23-32 |
| Number in Pace       | 147   |
| Percent in Pace      | 69.7% |
| Number > 27 MPH      | 122   |
| Percent > 27 MPH     | 57.8% |

|             |                      |       |      |      |      |    |    |     |     |     |     |    |    |    |      |
|-------------|----------------------|-------|------|------|------|----|----|-----|-----|-----|-----|----|----|----|------|
| Grand Total | 0                    | 0     | 0    | 1    | 9    | 26 | 68 | 219 | 430 | 388 | 231 | 85 | 43 | 24 | 1524 |
| Stats       | Percentile           | 15th  | 50th | 85th | 95th |    |    |     |     |     |     |    |    |    |      |
|             | Speed                | 23    | 27   | 32   | 35   |    |    |     |     |     |     |    |    |    |      |
|             | Mean Speed (Average) | 29.0  |      |      |      |    |    |     |     |     |     |    |    |    |      |
|             | 10 MPH Pace Speed    | 23-32 |      |      |      |    |    |     |     |     |     |    |    |    |      |
|             | Number in Pace       | 1122  |      |      |      |    |    |     |     |     |     |    |    |    |      |
|             | Percent in Pace      | 73.6% |      |      |      |    |    |     |     |     |     |    |    |    |      |
|             | Number > 27 MPH      | 771   |      |      |      |    |    |     |     |     |     |    |    |    |      |
|             | Percent > 27 MPH     | 50.6% |      |      |      |    |    |     |     |     |     |    |    |    |      |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: Combined

52933001

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 1         | 0         | 0         | 1         | 0    | 4     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 2         | 0         | 1         | 0         | 0         | 0    | 5     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 2         | 0         | 1         | 0         | 0         | 0    | 4     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 4         | 2         | 4         | 1         | 2         | 1         | 0    | 16    |
| 6:00       | 0     | 0       | 0       | 1        | 1         | 5         | 7         | 22        | 26        | 18        | 10        | 3         | 1         | 1    | 95    |
| 7:00       | 0     | 0       | 0       | 1        | 2         | 29        | 86        | 143       | 128       | 75        | 28        | 7         | 3         | 1    | 503   |
| 8:00       | 0     | 0       | 0       | 1        | 0         | 5         | 12        | 21        | 37        | 41        | 21        | 4         | 1         | 2    | 145   |
| 9:00       | 0     | 0       | 0       | 0        | 1         | 2         | 7         | 8         | 25        | 8         | 7         | 3         | 1         | 0    | 62    |
| 10:00      | 0     | 0       | 0       | 0        | 4         | 2         | 5         | 17        | 20        | 13        | 7         | 4         | 1         | 1    | 74    |
| 11:00      | 0     | 0       | 0       | 0        | 1         | 4         | 5         | 21        | 32        | 24        | 14        | 7         | 0         | 2    | 110   |
| 12:00 PM   | 0     | 0       | 0       | 0        | 1         | 4         | 10        | 17        | 31        | 20        | 8         | 5         | 1         | 1    | 98    |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 3         | 14        | 24        | 31        | 25        | 14        | 5         | 3         | 0    | 119   |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 3         | 13        | 48        | 81        | 42        | 26        | 11        | 2         | 3    | 229   |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 3         | 16        | 40        | 42        | 37        | 19        | 3         | 3         | 2    | 165   |
| 4:00       | 0     | 0       | 0       | 0        | 5         | 1         | 12        | 32        | 37        | 21        | 11        | 4         | 3         | 2    | 128   |
| 5:00       | 0     | 0       | 1       | 0        | 0         | 1         | 4         | 25        | 36        | 29        | 9         | 4         | 4         | 1    | 114   |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 3         | 5         | 8         | 11        | 7         | 12        | 1         | 1         | 1    | 49    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 2         | 3         | 6         | 7         | 5         | 3         | 2         | 1         | 0    | 29    |
| 8:00       | 0     | 0       | 0       | 1        | 1         | 2         | 1         | 11        | 14        | 4         | 5         | 1         | 0         | 0    | 40    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 4         | 3         | 0         | 2         | 0         | 0    | 11    |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 4         | 1         | 3         | 0         | 0         | 0         | 0    | 9     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 1         | 1         | 1         | 0         | 0         | 0    | 4     |
| Total      | 0     | 0       | 1       | 4        | 16        | 69        | 205       | 457       | 571       | 381       | 198       | 68        | 27        | 17   | 2014  |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 21    |
|                      | 50th  |
|                      | 25    |
|                      | 85th  |
|                      | 30    |
|                      | 95th  |
|                      | 34    |
| Mean Speed (Average) | 26.5  |
| 10 MPH Pace Speed    | 21-30 |
| Number in Pace       | 1475  |
| Percent in Pace      | 73.2% |
| Number > 27 MPH      | 691   |
| Percent > 27 MPH     | 34.3% |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: Combined

52933001

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 1         | 1         | 1         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 5     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 3         | 0         | 1         | 0         | 0         | 0    | 4     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 1         | 0         | 0         | 0         | 0    | 2     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 0         | 1         | 0         | 0         | 0         | 0    | 2     |
| 5:00       | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 1         | 4         | 3         | 1         | 0         | 0         | 0    | 11    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 1         | 4         | 7         | 6         | 8         | 5         | 3         | 1         | 1    | 36    |
| 7:00       | 0     | 0       | 0       | 0        | 0         | 1         | 6         | 8         | 17        | 10        | 7         | 2         | 2         | 0    | 53    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 4         | 6         | 10        | 7         | 3         | 2         | 1         | 0    | 33    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 1         | 5         | 7         | 15        | 17        | 9         | 1         | 1         | 0    | 56    |
| 10:00      | 0     | 0       | 1       | 0        | 0         | 2         | 5         | 8         | 16        | 16        | 6         | 2         | 2         | 2    | 60    |
| 11:00      | 0     | 0       | 0       | 0        | 1         | 1         | 9         | 11        | 9         | 9         | 6         | 4         | 1         | 2    | 53    |
| 12:00 PM   | 0     | 0       | 0       | 0        | 0         | 0         | 8         | 8         | 20        | 11        | 16        | 1         | 1         | 1    | 66    |
| 1:00       | 0     | 0       | 0       | 0        | 1         | 3         | 5         | 12        | 15        | 8         | 5         | 4         | 3         | 0    | 56    |
| 2:00       | 0     | 0       | 0       | 0        | 1         | 1         | 6         | 8         | 9         | 18        | 5         | 2         | 2         | 0    | 52    |
| 3:00       | 0     | 0       | 0       | 0        | 1         | 1         | 1         | 7         | 13        | 15        | 5         | 3         | 4         | 0    | 50    |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 12        | 15        | 13        | 8         | 4         | 3         | 2    | 58    |
| 5:00       | 0     | 0       | 0       | 1        | 0         | 1         | 1         | 7         | 12        | 15        | 7         | 0         | 0         | 0    | 44    |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 0         | 3         | 7         | 7         | 9         | 6         | 3         | 0         | 0    | 35    |
| 7:00       | 0     | 0       | 0       | 0        | 1         | 1         | 2         | 3         | 7         | 1         | 2         | 2         | 1         | 0    | 20    |
| 8:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 4         | 6         | 3         | 2         | 1         | 0         | 0    | 17    |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 1         | 1         | 0         | 1         | 0         | 0    | 4     |
| 10:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 5         | 1         | 2         | 0         | 0         | 0    | 10    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 1       | 1        | 6         | 15        | 64        | 121       | 191       | 167       | 96        | 35        | 22        | 8    | 727   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 22    |
|                      | 26    |
| Mean Speed (Average) | 27.8  |
| 10 MPH Pace Speed    | 21-30 |
| Number in Pace       | 510   |
| Percent in Pace      | 70.2% |
| Number > 27 MPH      | 328   |
| Percent > 27 MPH     | 45.1% |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH  
Direction: Combined

52933001

| 11/12/2022           | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|----------------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time                 | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM             | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 2         | 0         | 0         | 0         | 0    | 2     |
| 1:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 2     |
| 2:00                 | 0     | 0       | 0       | 0        | 0         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 3:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 1     |
| 4:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 6:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 3         | 4         | 2         | 1         | 1         | 0    | 13    |
| 7:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 1         | 5         | 3         | 1         | 0         | 1         | 0    | 11    |
| 8:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 3         | 5         | 8         | 4         | 2         | 4         | 2         | 0    | 28    |
| 9:00                 | 0     | 0       | 0       | 0        | 0         | 2         | 4         | 10        | 17        | 9         | 8         | 4         | 1         | 1    | 56    |
| 10:00                | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 8         | 14        | 5         | 10        | 1         | 5         | 1    | 45    |
| 11:00                | 0     | 0       | 0       | 0        | 0         | 2         | 7         | 8         | 11        | 7         | 5         | 2         | 0         | 0    | 42    |
| 12:00 PM             | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 2         | 7         | 8         | 5         | 1         | 0         | 1    | 26    |
| 1:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 4         | 7         | 12        | 14        | 4         | 4         | 1         | 0    | 46    |
| 2:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 2         | 6         | 10        | 3         | 0         | 3         | 1    | 25    |
| 3:00                 | 0     | 0       | 0       | 0        | 0         | 1         | 2         | 4         | 8         | 2         | 1         | 2         | 1         | 4    | 25    |
| 4:00                 | 0     | 0       | 1       | 0        | 0         | 0         | 2         | 4         | 10        | 5         | 2         | 2         | 0         | 1    | 27    |
| 5:00                 | 0     | 0       | 0       | 0        | 0         | 1         | 3         | 7         | 8         | 6         | 6         | 4         | 0         | 2    | 37    |
| 6:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 3         | 16        | 6         | 10        | 6         | 1         | 1         | 0    | 43    |
| 7:00                 | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 1         | 5         | 5         | 3         | 3         | 1         | 0    | 19    |
| 8:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 1         | 1         | 4         | 0         | 2         | 0         | 0    | 9     |
| 9:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 2         | 4         | 3         | 2         | 3         | 0         | 1         | 0    | 15    |
| 10:00                | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 2         | 3         | 2         | 0         | 0         | 0         | 0    | 8     |
| 11:00                | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 1     |
| Total                | 0     | 0       | 1       | 0        | 0         | 10        | 37        | 84        | 129       | 104       | 61        | 31        | 18        | 11   | 486   |
| Percentile           |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
|                      |       |         |         | 22       | 27        | 32        | 37        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 29.5     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 21-30    |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 337      |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 69.3%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 27 MPH      |       |         |         | 225      |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 27 MPH     |       |         |         | 46.3%    |           |           |           |           |           |           |           |           |           |      |       |
| Grand Total          | 0     | 0       | 3       | 5        | 22        | 94        | 306       | 662       | 891       | 652       | 355       | 134       | 67        | 36   | 3227  |
| Stats                |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Percentile           |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 21       | 25        | 31        | 34        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 27.2     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 21-30    |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 2322     |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 72.0%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 27 MPH      |       |         |         | 1244     |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 27 MPH     |       |         |         | 38.5%    |           |           |           |           |           |           |           |           |           |      |       |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH

52933001

| 11/10/2022 | WB,     |           | Hour Totals |           | EB,     |           | Hour Totals |           | Combined Totals |           |
|------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time       | Morning | Afternoon | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00      | 0       | 12        |             |           | 1       | 11        |             |           |                 |           |
| 12:15      | 0       | 17        |             |           | 2       | 21        |             |           |                 |           |
| 12:30      | 1       | 9         |             |           | 0       | 11        |             |           |                 |           |
| 12:45      | 0       | 10        | 1           | 48        | 0       | 7         | 3           | 50        | 4               | 98        |
| 1:00       | 0       | 12        |             |           | 0       | 12        |             |           |                 |           |
| 1:15       | 0       | 12        |             |           | 0       | 21        |             |           |                 |           |
| 1:30       | 0       | 12        |             |           | 0       | 14        |             |           |                 |           |
| 1:45       | 0       | 26        | 0           | 62        | 0       | 10        | 0           | 57        | 0               | 119       |
| 2:00       | 2       | 21        |             |           | 1       | 49        |             |           |                 |           |
| 2:15       | 0       | 22        |             |           | 0       | 29        |             |           |                 |           |
| 2:30       | 0       | 22        |             |           | 2       | 30        |             |           |                 |           |
| 2:45       | 0       | 22        | 2           | 87        | 0       | 34        | 3           | 142       | 5               | 229       |
| 3:00       | 1       | 15        |             |           | 1       | 45        |             |           |                 |           |
| 3:15       | 0       | 10        |             |           | 0       | 34        |             |           |                 |           |
| 3:30       | 1       | 10        |             |           | 0       | 19        |             |           |                 |           |
| 3:45       | 1       | 11        | 3           | 46        | 0       | 21        | 1           | 119       | 4               | 165       |
| 4:00       | 0       | 13        |             |           | 1       | 20        |             |           |                 |           |
| 4:15       | 0       | 7         |             |           | 0       | 25        |             |           |                 |           |
| 4:30       | 0       | 13        |             |           | 0       | 20        |             |           |                 |           |
| 4:45       | 0       | 18        | 0           | 51        | 0       | 12        | 1           | 77        | 1               | 128       |
| 5:00       | 5       | 14        |             |           | 0       | 27        |             |           |                 |           |
| 5:15       | 2       | 11        |             |           | 1       | 25        |             |           |                 |           |
| 5:30       | 1       | 7         |             |           | 0       | 12        |             |           |                 |           |
| 5:45       | 5       | 9         | 13          | 41        | 2       | 9         | 3           | 73        | 16              | 114       |
| 6:00       | 10      | 5         |             |           | 2       | 4         |             |           |                 |           |
| 6:15       | 20      | 7         |             |           | 4       | 11        |             |           |                 |           |
| 6:30       | 14      | 7         |             |           | 7       | 4         |             |           |                 |           |
| 6:45       | 31      | 7         | 75          | 26        | 7       | 4         | 20          | 23        | 95              | 49        |
| 7:00       | 81      | 4         |             |           | 20      | 4         |             |           |                 |           |
| 7:15       | 149     | 1         |             |           | 54      | 2         |             |           |                 |           |
| 7:30       | 68      | 5         |             |           | 34      | 3         |             |           |                 |           |
| 7:45       | 63      | 8         | 361         | 18        | 34      | 2         | 142         | 11        | 503             | 29        |
| 8:00       | 41      | 5         |             |           | 25      | 15        |             |           |                 |           |
| 8:15       | 21      | 4         |             |           | 19      | 3         |             |           |                 |           |
| 8:30       | 9       | 2         |             |           | 7       | 7         |             |           |                 |           |
| 8:45       | 12      | 1         | 83          | 12        | 11      | 3         | 62          | 28        | 145             | 40        |
| 9:00       | 12      | 2         |             |           | 7       | 0         |             |           |                 |           |
| 9:15       | 7       | 2         |             |           | 9       | 0         |             |           |                 |           |
| 9:30       | 11      | 2         |             |           | 8       | 3         |             |           |                 |           |
| 9:45       | 4       | 0         | 34          | 6         | 4       | 2         | 28          | 5         | 62              | 11        |
| 10:00      | 8       | 2         |             |           | 6       | 1         |             |           |                 |           |
| 10:15      | 2       | 3         |             |           | 15      | 0         |             |           |                 |           |
| 10:30      | 8       | 1         |             |           | 6       | 0         |             |           |                 |           |
| 10:45      | 18      | 1         | 36          | 7         | 11      | 1         | 38          | 2         | 74              | 9         |
| 11:00      | 10      | 1         |             |           | 25      | 0         |             |           |                 |           |
| 11:15      | 15      | 0         |             |           | 18      | 1         |             |           |                 |           |
| 11:30      | 13      | 0         |             |           | 9       | 1         |             |           |                 |           |
| 11:45      | 9       | 0         | 47          | 1         | 11      | 1         | 63          | 3         | 110             | 4         |
| Total      | 655     | 405       |             |           | 364     | 590       |             |           | 1019            | 995       |
| Percent    | 61.8%   | 38.2%     |             |           | 38.2%   | 61.8%     |             |           | 50.6%           | 49.4%     |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH

52933001

| 11/11/2022 | WB,     |           | Hour Totals |           | EB,     |           | Hour Totals |           | Combined Totals |           |
|------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time       | Morning | Afternoon | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00      |         | 2         |             | 4         |         | 0         |             | 10        |                 |           |
| 12:15      |         | 1         |             | 11        |         | 0         |             | 8         |                 |           |
| 12:30      |         | 0         |             | 8         |         | 1         |             | 10        |                 |           |
| 12:45      |         | 0         |             | 9         | 3       | 32        | 1           | 6         | 2               | 34        |
| 1:00       |         | 0         |             | 11        |         |           | 0           | 3         |                 | 5         |
| 1:15       |         | 0         |             | 4         |         |           | 0           | 6         |                 |           |
| 1:30       |         | 0         |             | 5         |         |           | 0           | 10        |                 |           |
| 1:45       |         | 0         |             | 9         | 0       | 29        | 0           | 8         | 0               | 27        |
| 2:00       |         | 0         |             | 3         |         |           | 1           | 9         |                 | 0         |
| 2:15       |         | 0         |             | 11        |         |           | 0           | 4         |                 |           |
| 2:30       |         | 0         |             | 2         |         |           | 2           | 12        |                 |           |
| 2:45       |         | 1         |             | 3         | 1       | 19        | 0           | 8         | 3               | 33        |
| 3:00       |         | 0         |             | 5         |         |           | 1           | 12        |                 | 4         |
| 3:15       |         | 0         |             | 1         |         |           | 0           | 3         |                 |           |
| 3:30       |         | 0         |             | 5         |         |           | 0           | 10        |                 |           |
| 3:45       |         | 1         |             | 6         | 1       | 17        | 0           | 8         | 1               | 33        |
| 4:00       |         | 0         |             | 4         |         |           | 0           | 19        |                 | 2         |
| 4:15       |         | 0         |             | 2         |         |           | 0           | 6         |                 |           |
| 4:30       |         | 0         |             | 6         |         |           | 0           | 10        |                 |           |
| 4:45       |         | 1         |             | 6         | 1       | 18        | 1           | 5         | 1               | 40        |
| 5:00       |         | 0         |             | 4         |         |           | 0           | 12        |                 | 2         |
| 5:15       |         | 2         |             | 5         |         |           | 2           | 7         |                 |           |
| 5:30       |         | 2         |             | 4         |         |           | 1           | 4         |                 |           |
| 5:45       |         | 3         |             | 4         | 7       | 17        | 1           | 4         | 4               | 27        |
| 6:00       |         | 5         |             | 4         |         |           | 1           | 3         |                 | 11        |
| 6:15       |         | 13        |             | 6         |         |           | 1           | 6         |                 |           |
| 6:30       |         | 9         |             | 4         |         |           | 0           | 5         |                 |           |
| 6:45       |         | 5         |             | 4         | 32      | 18        | 2           | 3         | 4               | 17        |
| 7:00       |         | 8         |             | 2         |         |           | 2           | 1         |                 | 36        |
| 7:15       |         | 7         |             | 4         |         |           | 3           | 1         |                 |           |
| 7:30       |         | 10        |             | 2         |         |           | 6           | 5         |                 |           |
| 7:45       |         | 14        |             | 4         | 39      | 12        | 3           | 1         | 14              | 8         |
| 8:00       |         | 6         |             | 2         |         |           | 2           | 1         |                 | 53        |
| 8:15       |         | 7         |             | 3         |         |           | 3           | 1         |                 |           |
| 8:30       |         | 4         |             | 2         |         |           | 4           | 3         |                 |           |
| 8:45       |         | 5         |             | 4         | 22      | 11        | 2           | 1         | 11              | 6         |
| 9:00       |         | 3         |             | 2         |         |           | 8           | 0         |                 | 33        |
| 9:15       |         | 10        |             | 0         |         |           | 5           | 1         |                 |           |
| 9:30       |         | 9         |             | 0         |         |           | 8           | 0         |                 |           |
| 9:45       |         | 9         |             | 0         | 31      | 2         | 4           | 1         | 25              | 2         |
| 10:00      |         | 7         |             | 1         |         |           | 6           | 1         |                 | 56        |
| 10:15      |         | 4         |             | 1         |         |           | 8           | 3         |                 |           |
| 10:30      |         | 10        |             | 2         |         |           | 7           | 0         |                 |           |
| 10:45      |         | 6         |             | 2         | 27      | 6         | 12          | 0         | 33              | 4         |
| 11:00      |         | 7         |             | 0         |         |           | 7           | 0         |                 | 60        |
| 11:15      |         | 3         |             | 0         |         |           | 8           | 0         |                 |           |
| 11:30      |         | 4         |             | 0         |         |           | 9           | 0         |                 |           |
| 11:45      |         | 9         |             | 0         | 23      | 0         | 6           | 0         | 30              | 0         |
| Total      |         | 187       |             | 181       |         |           | 128         | 231       |                 | 315       |
| Percent    |         | 50.8%     |             | 49.2%     |         |           | 35.7%       | 64.3%     |                 | 43.3%     |
|            |         |           |             |           |         |           |             |           |                 | 56.7%     |



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH

52933001

| 11/12/2022  |         | WB,       |       | Hour Totals |           | EB,     |           | Hour Totals |           | Combined Totals |           |
|-------------|---------|-----------|-------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time        | Morning | Afternoon |       | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00       |         | 0         | 5     |             |           | 1       | 4         |             |           |                 |           |
| 12:15       |         | 0         | 4     |             |           | 0       | 4         |             |           |                 |           |
| 12:30       |         | 0         | 6     |             |           | 0       | 2         |             |           |                 |           |
| 12:45       |         | 0         | 0     | 0           | 15        | 1       | 1         | 2           | 11        | 2               | 26        |
| 1:00        |         | 0         | 4     |             |           | 0       | 2         |             |           |                 |           |
| 1:15        |         | 0         | 6     |             |           | 1       | 15        |             |           |                 |           |
| 1:30        |         | 0         | 9     |             |           | 1       | 3         |             |           |                 |           |
| 1:45        |         | 0         | 4     | 0           | 23        | 0       | 3         | 2           | 23        | 2               | 46        |
| 2:00        |         | 1         | 7     |             |           | 0       | 5         |             |           |                 |           |
| 2:15        |         | 0         | 3     |             |           | 1       | 2         |             |           |                 |           |
| 2:30        |         | 1         | 3     |             |           | 0       | 0         |             |           |                 |           |
| 2:45        |         | 0         | 3     | 2           | 16        | 0       | 2         | 1           | 9         | 3               | 25        |
| 3:00        |         | 0         | 3     |             |           | 0       | 2         |             |           |                 |           |
| 3:15        |         | 0         | 5     |             |           | 0       | 0         |             |           |                 |           |
| 3:30        |         | 0         | 5     |             |           | 0       | 3         |             |           |                 |           |
| 3:45        |         | 0         | 2     | 0           | 15        | 1       | 5         | 1           | 10        | 1               | 25        |
| 4:00        |         | 0         | 5     |             |           | 0       | 3         |             |           |                 |           |
| 4:15        |         | 0         | 7     |             |           | 0       | 1         |             |           |                 |           |
| 4:30        |         | 0         | 4     |             |           | 1       | 2         |             |           |                 |           |
| 4:45        |         | 0         | 5     | 0           | 21        | 0       | 0         | 1           | 6         | 1               | 27        |
| 5:00        |         | 0         | 4     |             |           | 0       | 2         |             |           |                 |           |
| 5:15        |         | 0         | 3     |             |           | 0       | 5         |             |           |                 |           |
| 5:30        |         | 1         | 4     |             |           | 0       | 2         |             |           |                 |           |
| 5:45        |         | 0         | 13    | 1           | 24        | 0       | 4         | 0           | 13        | 1               | 37        |
| 6:00        |         | 3         | 5     |             |           | 1       | 18        |             |           |                 |           |
| 6:15        |         | 3         | 3     |             |           | 0       | 5         |             |           |                 |           |
| 6:30        |         | 3         | 4     |             |           | 1       | 3         |             |           |                 |           |
| 6:45        |         | 2         | 4     | 11          | 16        | 0       | 1         | 2           | 27        | 13              | 43        |
| 7:00        |         | 1         | 2     |             |           | 1       | 4         |             |           |                 |           |
| 7:15        |         | 1         | 1     |             |           | 0       | 4         |             |           |                 |           |
| 7:30        |         | 2         | 0     |             |           | 4       | 0         |             |           |                 |           |
| 7:45        |         | 0         | 5     | 4           | 8         | 2       | 3         | 7           | 11        | 11              | 19        |
| 8:00        |         | 4         | 1     |             |           | 1       | 2         |             |           |                 |           |
| 8:15        |         | 2         | 1     |             |           | 1       | 1         |             |           |                 |           |
| 8:30        |         | 3         | 2     |             |           | 6       | 1         |             |           |                 |           |
| 8:45        |         | 9         | 0     | 18          | 4         | 2       | 1         | 10          | 5         | 28              | 9         |
| 9:00        |         | 1         | 5     |             |           | 5       | 2         |             |           |                 |           |
| 9:15        |         | 2         | 2     |             |           | 1       | 2         |             |           |                 |           |
| 9:30        |         | 11        | 1     |             |           | 7       | 1         |             |           |                 |           |
| 9:45        |         | 18        | 2     | 32          | 10        | 11      | 0         | 24          | 5         | 56              | 15        |
| 10:00       |         | 5         | 3     |             |           | 6       | 0         |             |           |                 |           |
| 10:15       |         | 7         | 2     |             |           | 7       | 0         |             |           |                 |           |
| 10:30       |         | 3         | 1     |             |           | 3       | 0         |             |           |                 |           |
| 10:45       |         | 7         | 2     | 22          | 8         | 7       | 0         | 23          | 0         | 45              | 8         |
| 11:00       |         | 5         | 1     |             |           | 2       | 0         |             |           |                 |           |
| 11:15       |         | 9         | 0     |             |           | 4       | 1         |             |           |                 |           |
| 11:30       |         | 5         | 1     |             |           | 3       | 0         |             |           |                 |           |
| 11:45       |         | 5         | 0     | 24          | 2         | 9       | 0         | 18          | 1         | 42              | 3         |
| Total       |         | 114       | 162   |             |           | 91      | 121       |             |           | 205             | 283       |
| Percent     |         | 41.3%     | 58.7% |             |           | 42.9%   | 57.1%     |             |           | 42.0%           | 58.0%     |
| Grand Total |         | 956       | 748   |             |           | 583     | 942       |             |           | 1539            | 1690      |
| Percent     |         | 56.1%     | 43.9% |             |           | 38.2%   | 61.8%     |             |           | 47.7%           | 52.3%     |

ADT

ADT: 1,076

AADT: 1,076



Accurate Counts  
978-664-2565

Location : Evans Drive  
Location : East of Hanover Street  
City/State: Lebanon, NH

52933001

| 11/7/2022  | Monday     |     | Tuesday     |     | Wednesday |     | Thursday |      | Friday   |       | Saturday |      | Sunday |     | Week Average |      |
|------------|------------|-----|-------------|-----|-----------|-----|----------|------|----------|-------|----------|------|--------|-----|--------------|------|
| Time       | WB,        | EB, | WB,         | EB, | WB,       | EB, | WB,      | EB,  | WB,      | EB,   | WB,      | EB,  | WB,    | EB, | WB,          | EB,  |
| 12:00 AM   | *          | *   | *           | *   | *         | *   | 1        | 3    | 3        | 2     | 0        | 2    | *      | *   | 1            | 2    |
| 1:00       | *          | *   | *           | *   | *         | *   | 0        | 0    | 0        | 0     | 0        | 2    | *      | *   | 0            | 1    |
| 2:00       | *          | *   | *           | *   | *         | *   | 2        | 3    | 1        | 3     | 2        | 1    | *      | *   | 2            | 2    |
| 3:00       | *          | *   | *           | *   | *         | *   | 3        | 1    | 1        | 1     | 0        | 1    | *      | *   | 1            | 1    |
| 4:00       | *          | *   | *           | *   | *         | *   | 0        | 1    | 1        | 1     | 0        | 1    | *      | *   | 0            | 1    |
| 5:00       | *          | *   | *           | *   | *         | *   | 13       | 3    | 7        | 4     | 1        | 0    | *      | *   | 7            | 2    |
| 6:00       | *          | *   | *           | *   | *         | *   | 75       | 20   | 32       | 4     | 11       | 2    | *      | *   | 39           | 9    |
| 7:00       | *          | *   | *           | *   | *         | *   | 361      | 142  | 39       | 14    | 4        | 7    | *      | *   | 135          | 54   |
| 8:00       | *          | *   | *           | *   | *         | *   | 83       | 62   | 22       | 11    | 18       | 10   | *      | *   | 41           | 28   |
| 9:00       | *          | *   | *           | *   | *         | *   | 34       | 28   | 31       | 25    | 32       | 24   | *      | *   | 32           | 26   |
| 10:00      | *          | *   | *           | *   | *         | *   | 36       | 38   | 27       | 33    | 22       | 23   | *      | *   | 28           | 31   |
| 11:00      | *          | *   | *           | *   | *         | *   | 47       | 63   | 23       | 30    | 24       | 18   | *      | *   | 31           | 37   |
| 12:00 PM   | *          | *   | *           | *   | *         | *   | 48       | 50   | 32       | 34    | 15       | 11   | *      | *   | 32           | 32   |
| 1:00       | *          | *   | *           | *   | *         | *   | 62       | 57   | 29       | 27    | 23       | 23   | *      | *   | 38           | 36   |
| 2:00       | *          | *   | *           | *   | *         | *   | 87       | 142  | 19       | 33    | 16       | 9    | *      | *   | 41           | 61   |
| 3:00       | *          | *   | *           | *   | *         | *   | 46       | 119  | 17       | 33    | 15       | 10   | *      | *   | 26           | 54   |
| 4:00       | *          | *   | *           | *   | *         | *   | 51       | 77   | 18       | 40    | 21       | 6    | *      | *   | 30           | 41   |
| 5:00       | *          | *   | *           | *   | *         | *   | 41       | 73   | 17       | 27    | 24       | 13   | *      | *   | 27           | 38   |
| 6:00       | *          | *   | *           | *   | *         | *   | 26       | 23   | 18       | 17    | 16       | 27   | *      | *   | 20           | 22   |
| 7:00       | *          | *   | *           | *   | *         | *   | 18       | 11   | 12       | 8     | 8        | 11   | *      | *   | 13           | 10   |
| 8:00       | *          | *   | *           | *   | *         | *   | 12       | 28   | 11       | 6     | 4        | 5    | *      | *   | 9            | 13   |
| 9:00       | *          | *   | *           | *   | *         | *   | 6        | 5    | 2        | 2     | 10       | 5    | *      | *   | 6            | 4    |
| 10:00      | *          | *   | *           | *   | *         | *   | 7        | 2    | 6        | 4     | 8        | 0    | *      | *   | 7            | 2    |
| 11:00      | *          | *   | *           | *   | *         | *   | 1        | 3    | 0        | 0     | 1        | 0    | *      | *   | 1            | 1    |
| Total      | 0          | 0   | 0           | 0   | 0         | 0   | 1060     | 954  | 368      | 359   | 275      | 211  | 0      | 0   | 567          | 508  |
| Day        | 0          |     | 0           |     | 0         |     | 2014     |      | 727      |       | 486      |      | 0      |     | 1075         |      |
| AM Peak    |            |     |             |     |           |     | 7:00     | 7:00 | 7:00     | 10:00 | 9:00     | 9:00 |        |     | 7:00         | 7:00 |
| Volume     |            |     |             |     |           |     | 361      | 142  | 39       | 33    | 32       | 24   |        |     | 135          | 54   |
| PM Peak    |            |     |             |     |           |     | 2:00     | 2:00 | 12:00 PM | 4:00  | 5:00     | 6:00 |        |     | 2:00         | 2:00 |
| Volume     |            |     |             |     |           |     | 87       | 142  | 32       | 40    | 24       | 27   |        |     | 41           | 61   |
| Comb Total | 0          |     | 0           |     | 0         |     | 2014     |      | 727      |       | 486      |      | 0      |     | 1075         |      |
| ADT        | ADT: 1,076 |     | AADT: 1,076 |     |           |     |          |      |          |       |          |      |        |     |              |      |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: NB,

52933002

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 3:00       | 0     | 0       | 0       | 1        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 5:00       | 0     | 0       | 1       | 3        | 7         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 12    |
| 6:00       | 0     | 0       | 0       | 16       | 37        | 15        | 8         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 76    |
| 7:00       | 0     | 0       | 7       | 63       | 217       | 66        | 10        | 0         | 0         | 0         | 0         | 1         | 0         | 0    | 364   |
| 8:00       | 0     | 0       | 1       | 16       | 53        | 10        | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 82    |
| 9:00       | 0     | 0       | 2       | 6        | 15        | 12        | 3         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 39    |
| 10:00      | 0     | 0       | 1       | 11       | 16        | 6         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 34    |
| 11:00      | 0     | 0       | 2       | 4        | 28        | 12        | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 48    |
| 12:00 PM   | 0     | 0       | 2       | 11       | 26        | 12        | 4         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 56    |
| 1:00       | 0     | 0       | 2       | 13       | 30        | 5         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 52    |
| 2:00       | 0     | 0       | 7       | 15       | 54        | 11        | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 91    |
| 3:00       | 0     | 0       | 2       | 17       | 34        | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 58    |
| 4:00       | 0     | 0       | 0       | 6        | 30        | 13        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 49    |
| 5:00       | 0     | 0       | 3       | 7        | 25        | 9         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 48    |
| 6:00       | 0     | 0       | 1       | 5        | 11        | 7         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 25    |
| 7:00       | 0     | 0       | 0       | 7        | 9         | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 21    |
| 8:00       | 0     | 0       | 0       | 5        | 8         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 13    |
| 9:00       | 0     | 0       | 0       | 1        | 4         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 7     |
| 10:00      | 0     | 0       | 0       | 2        | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 7     |
| 11:00      | 0     | 0       | 0       | 1        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| Total      | 0     | 0       | 31      | 210      | 611       | 190       | 40        | 4         | 2         | 0         | 0         | 1         | 0         | 0    | 1089  |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 12    |
|                      | 14    |
|                      | 15    |
|                      | 17    |
| Mean Speed (Average) | 13.6  |
| 10 MPH Pace Speed    | 9-18  |
| Number in Pace       | 1024  |
| Percent in Pace      | 94.0% |
| Number > 15 MPH      | 237   |
| Percent > 15 MPH     | 21.8% |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: NB,

52933002

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 1        | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 2:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 3:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 5:00       | 0     | 0       | 0       | 0        | 8         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 8     |
| 6:00       | 0     | 0       | 0       | 9        | 17        | 8         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 36    |
| 7:00       | 0     | 0       | 0       | 9        | 23        | 8         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 42    |
| 8:00       | 0     | 0       | 0       | 7        | 10        | 7         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 26    |
| 9:00       | 0     | 0       | 2       | 6        | 16        | 6         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 34    |
| 10:00      | 0     | 0       | 1       | 6        | 19        | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 29    |
| 11:00      | 0     | 0       | 2       | 3        | 11        | 2         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 21    |
| 12:00 PM   | 0     | 0       | 2       | 5        | 20        | 8         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 36    |
| 1:00       | 0     | 0       | 0       | 7        | 14        | 7         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 32    |
| 2:00       | 0     | 0       | 2       | 5        | 12        | 2         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 23    |
| 3:00       | 0     | 0       | 0       | 3        | 9         | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 17    |
| 4:00       | 0     | 0       | 0       | 3        | 11        | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 21    |
| 5:00       | 0     | 0       | 1       | 2        | 10        | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 20    |
| 6:00       | 0     | 0       | 0       | 1        | 11        | 3         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 18    |
| 7:00       | 0     | 0       | 0       | 3        | 6         | 3         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 14    |
| 8:00       | 0     | 0       | 0       | 3        | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 10    |
| 9:00       | 0     | 0       | 0       | 1        | 1         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 10:00      | 0     | 0       | 0       | 3        | 4         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 8     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 10      | 77       | 210       | 75        | 31        | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 404   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 12    |
|                      | 14    |
| Mean Speed (Average) | 13.9  |
| 10 MPH Pace Speed    | 9-18  |
| Number in Pace       | 372   |
| Percent in Pace      | 92.1% |
| Number > 15 MPH      | 107   |
| Percent > 15 MPH     | 26.5% |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: NB,

52933002

| 11/12/2022           | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12   | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|----------------------|-------|---------|---------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time                 | MPH   | MPH     | MPH     | MPH        | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM             | 0     | 0       | 0       | 1          | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 1:00                 | 0     | 0       | 0       | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00                 | 0     | 0       | 0       | 1          | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 3:00                 | 0     | 0       | 0       | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 4:00                 | 0     | 0       | 0       | 0          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 5:00                 | 0     | 0       | 0       | 0          | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 6:00                 | 0     | 0       | 0       | 2          | 7         | 4         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 14    |
| 7:00                 | 0     | 0       | 0       | 0          | 3         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 7     |
| 8:00                 | 0     | 0       | 0       | 2          | 11        | 4         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 18    |
| 9:00                 | 0     | 0       | 1       | 6          | 17        | 5         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 33    |
| 10:00                | 0     | 0       | 1       | 11         | 9         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 24    |
| 11:00                | 0     | 0       | 0       | 6          | 9         | 6         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 23    |
| 12:00 PM             | 0     | 0       | 0       | 4          | 12        | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 21    |
| 1:00                 | 0     | 0       | 0       | 6          | 15        | 4         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 28    |
| 2:00                 | 0     | 0       | 0       | 1          | 7         | 9         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 18    |
| 3:00                 | 0     | 0       | 0       | 2          | 6         | 8         | 0         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 18    |
| 4:00                 | 0     | 0       | 0       | 3          | 8         | 9         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 22    |
| 5:00                 | 0     | 0       | 0       | 4          | 17        | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 28    |
| 6:00                 | 0     | 0       | 0       | 5          | 10        | 3         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 19    |
| 7:00                 | 0     | 0       | 0       | 1          | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 8     |
| 8:00                 | 0     | 0       | 0       | 0          | 2         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 5     |
| 9:00                 | 0     | 0       | 0       | 2          | 6         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 11    |
| 10:00                | 0     | 0       | 0       | 2          | 7         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 9     |
| 11:00                | 0     | 0       | 0       | 0          | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| Total                | 0     | 0       | 2       | 59         | 156       | 72        | 18        | 4         | 1         | 0         | 0         | 0         | 0         | 0    | 312   |
|                      |       |         |         |            |           |           |           |           |           |           |           |           |           |      |       |
| Percentile           |       |         |         | 15th       | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 12         | 14        | 17        | 19        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 14.1       |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 9-18       |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 292        |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 93.6%      |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 95         |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 30.4%      |           |           |           |           |           |           |           |           |           |      |       |
| Grand Total          | 0     | 0       | 43      | 346        | 977       | 337       | 89        | 9         | 3         | 0         | 0         | 1         | 0         | 0    | 1805  |
|                      |       |         |         |            |           |           |           |           |           |           |           |           |           |      |       |
| Stats                |       |         |         | Percentile | 15th      | 50th      | 85th      | 95th      |           |           |           |           |           |      |       |
|                      |       |         |         | Speed      | 12        | 15        | 18        | 19        |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 14.8       |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 9-18       |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 1688       |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 93.5%      |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 1336       |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 41.5%      |           |           |           |           |           |           |           |           |           |      |       |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: SB,

52933002

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 3:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 1         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 6:00       | 0     | 0       | 0       | 0        | 1         | 2         | 7         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 10    |
| 7:00       | 0     | 0       | 19      | 24       | 57        | 39        | 6         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 146   |
| 8:00       | 0     | 0       | 1       | 5        | 13        | 21        | 11        | 0         | 2         | 0         | 0         | 0         | 0         | 0    | 53    |
| 9:00       | 0     | 0       | 0       | 0        | 3         | 9         | 10        | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 23    |
| 10:00      | 0     | 0       | 0       | 0        | 9         | 11        | 8         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 29    |
| 11:00      | 0     | 0       | 0       | 3        | 15        | 14        | 23        | 5         | 0         | 1         | 0         | 0         | 0         | 0    | 61    |
| 12:00 PM   | 0     | 0       | 0       | 2        | 8         | 22        | 14        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 46    |
| 1:00       | 0     | 0       | 0       | 3        | 7         | 20        | 13        | 3         | 0         | 1         | 0         | 0         | 0         | 1    | 48    |
| 2:00       | 0     | 0       | 27      | 18       | 39        | 42        | 10        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 136   |
| 3:00       | 0     | 0       | 2       | 6        | 26        | 31        | 12        | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 79    |
| 4:00       | 0     | 0       | 0       | 0        | 13        | 30        | 14        | 5         | 0         | 0         | 0         | 0         | 0         | 0    | 62    |
| 5:00       | 0     | 0       | 0       | 2        | 20        | 24        | 15        | 3         | 1         | 1         | 1         | 0         | 0         | 0    | 67    |
| 6:00       | 0     | 0       | 0       | 1        | 6         | 11        | 5         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 23    |
| 7:00       | 0     | 0       | 1       | 0        | 3         | 5         | 4         | 0         | 1         | 0         | 1         | 0         | 0         | 0    | 15    |
| 8:00       | 0     | 0       | 0       | 1        | 8         | 10        | 7         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 26    |
| 9:00       | 0     | 0       | 0       | 1        | 0         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 5     |
| 10:00      | 0     | 0       | 0       | 0        | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 11:00      | 0     | 0       | 0       | 0        | 1         | 2         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 4     |
| Total      | 0     | 0       | 50      | 66       | 238       | 301       | 160       | 20        | 6         | 3         | 2         | 0         | 0         | 1    | 847   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 12    |
|                      | 50th  |
|                      | 15    |
|                      | 85th  |
|                      | 19    |
|                      | 95th  |
|                      | 20    |
| Mean Speed (Average) | 15.7  |
| 10 MPH Pace Speed    | 11-20 |
| Number in Pace       | 718   |
| Percent in Pace      | 84.8% |
| Number > 15 MPH      | 493   |
| Percent > 15 MPH     | 58.2% |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: SB,

52933002

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 1        | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 2     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 1        | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 3:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 2         | 2         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 5     |
| 6:00       | 0     | 0       | 0       | 0        | 0         | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 7:00       | 0     | 0       | 0       | 0        | 2         | 7         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 13    |
| 8:00       | 0     | 0       | 0       | 0        | 1         | 3         | 6         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 12    |
| 9:00       | 0     | 0       | 1       | 0        | 2         | 9         | 8         | 0         | 0         | 1         | 1         | 0         | 0         | 0    | 22    |
| 10:00      | 0     | 0       | 1       | 1        | 9         | 12        | 4         | 3         | 1         | 1         | 2         | 1         | 0         | 0    | 35    |
| 11:00      | 0     | 0       | 0       | 1        | 5         | 12        | 6         | 1         | 2         | 0         | 0         | 0         | 0         | 0    | 27    |
| 12:00 PM   | 0     | 0       | 0       | 1        | 8         | 16        | 7         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 33    |
| 1:00       | 0     | 0       | 0       | 0        | 6         | 9         | 10        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 25    |
| 2:00       | 0     | 0       | 2       | 5        | 8         | 3         | 10        | 3         | 0         | 1         | 0         | 0         | 0         | 0    | 32    |
| 3:00       | 0     | 0       | 0       | 1        | 8         | 11        | 5         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 27    |
| 4:00       | 0     | 0       | 0       | 1        | 8         | 15        | 14        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 38    |
| 5:00       | 0     | 0       | 0       | 1        | 9         | 11        | 4         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 26    |
| 6:00       | 0     | 0       | 0       | 1        | 10        | 2         | 4         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 18    |
| 7:00       | 0     | 0       | 0       | 1        | 3         | 4         | 3         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 12    |
| 8:00       | 0     | 0       | 0       | 0        | 2         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 4     |
| 9:00       | 0     | 0       | 0       | 0        | 0         | 0         | 1         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 2     |
| 10:00      | 0     | 0       | 0       | 0        | 2         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 4     |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 4       | 15       | 87        | 123       | 88        | 10        | 9         | 5         | 3         | 1         | 0         | 0    | 345   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 14    |
|                      | 50th  |
|                      | 17    |
|                      | 85th  |
|                      | 19    |
|                      | 95th  |
|                      | 24    |
| Mean Speed (Average) | 17.0  |
| 10 MPH Pace Speed    | 11-20 |
| Number in Pace       | 301   |
| Percent in Pace      | 87.2% |
| Number > 15 MPH      | 239   |
| Percent > 15 MPH     | 69.3% |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: SB,

52933002

| 11/12/2022           | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|----------------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time                 | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM             | 0     | 0       | 0       | 0        | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 1:00                 | 0     | 0       | 0       | 0        | 0         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 2:00                 | 0     | 0       | 0       | 1        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 3:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00                 | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 6:00                 | 0     | 0       | 0       | 0        | 0         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 7:00                 | 0     | 0       | 0       | 0        | 1         | 3         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 8     |
| 8:00                 | 0     | 0       | 0       | 1        | 1         | 7         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 11    |
| 9:00                 | 0     | 0       | 1       | 1        | 1         | 10        | 9         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 23    |
| 10:00                | 0     | 0       | 0       | 0        | 2         | 12        | 7         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 23    |
| 11:00                | 0     | 0       | 0       | 1        | 5         | 5         | 6         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 18    |
| 12:00 PM             | 0     | 0       | 0       | 0        | 8         | 2         | 1         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 13    |
| 1:00                 | 0     | 0       | 0       | 0        | 3         | 10        | 9         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 22    |
| 2:00                 | 0     | 0       | 0       | 0        | 2         | 5         | 5         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 12    |
| 3:00                 | 0     | 0       | 0       | 0        | 1         | 7         | 2         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 11    |
| 4:00                 | 0     | 0       | 0       | 1        | 2         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 7     |
| 5:00                 | 0     | 0       | 1       | 0        | 5         | 2         | 5         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 14    |
| 6:00                 | 0     | 0       | 0       | 2        | 8         | 12        | 4         | 0         | 1         | 1         | 0         | 0         | 0         | 0    | 28    |
| 7:00                 | 0     | 0       | 0       | 0        | 3         | 8         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 13    |
| 8:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 2         | 0         | 0         | 0         | 1         | 0         | 0         | 0    | 4     |
| 9:00                 | 0     | 0       | 0       | 0        | 1         | 2         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 5     |
| 10:00                | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 11:00                | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total                | 0     | 0       | 2       | 7        | 47        | 93        | 61        | 4         | 5         | 1         | 1         | 0         | 0         | 0    | 221   |
| Percentile           |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
|                      |       |         |         | 14       | 17        | 19        | 20        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 16.9     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 11-20    |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 202      |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 91.4%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 165      |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 74.7%    |           |           |           |           |           |           |           |           |           |      |       |
| Grand Total          | 0     | 0       | 56      | 88       | 372       | 517       | 309       | 34        | 20        | 9         | 6         | 1         | 0         | 1    | 1413  |
| Stats                |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Percentile           |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 13       | 16        | 19        | 21        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 16.2     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 11-20    |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 1220     |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 86.3%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 897      |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 63.5%    |           |           |           |           |           |           |           |           |           |      |       |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: Combined

52933002

| 11/10/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 0        | 3         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 4     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| 2:00       | 0     | 0       | 0       | 0        | 4         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 5     |
| 3:00       | 0     | 0       | 0       | 1        | 1         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 4:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 1       | 3        | 8         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 15    |
| 6:00       | 0     | 0       | 0       | 16       | 38        | 17        | 15        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 86    |
| 7:00       | 0     | 0       | 26      | 87       | 274       | 105       | 16        | 1         | 0         | 0         | 0         | 1         | 0         | 0    | 510   |
| 8:00       | 0     | 0       | 2       | 21       | 66        | 31        | 11        | 1         | 3         | 0         | 0         | 0         | 0         | 0    | 135   |
| 9:00       | 0     | 0       | 2       | 6        | 18        | 21        | 13        | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 62    |
| 10:00      | 0     | 0       | 1       | 11       | 25        | 17        | 8         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 63    |
| 11:00      | 0     | 0       | 2       | 7        | 43        | 26        | 24        | 6         | 0         | 1         | 0         | 0         | 0         | 0    | 109   |
| 12:00 PM   | 0     | 0       | 2       | 13       | 34        | 34        | 18        | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 102   |
| 1:00       | 0     | 0       | 2       | 16       | 37        | 25        | 14        | 4         | 0         | 1         | 0         | 0         | 0         | 1    | 100   |
| 2:00       | 0     | 0       | 34      | 33       | 93        | 53        | 14        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 227   |
| 3:00       | 0     | 0       | 4       | 23       | 60        | 34        | 14        | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 137   |
| 4:00       | 0     | 0       | 0       | 6        | 43        | 43        | 14        | 5         | 0         | 0         | 0         | 0         | 0         | 0    | 111   |
| 5:00       | 0     | 0       | 3       | 9        | 45        | 33        | 19        | 3         | 1         | 1         | 1         | 0         | 0         | 0    | 115   |
| 6:00       | 0     | 0       | 1       | 6        | 17        | 18        | 6         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 48    |
| 7:00       | 0     | 0       | 1       | 7        | 12        | 8         | 6         | 0         | 1         | 0         | 1         | 0         | 0         | 0    | 36    |
| 8:00       | 0     | 0       | 0       | 6        | 16        | 10        | 7         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 39    |
| 9:00       | 0     | 0       | 0       | 2        | 4         | 6         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 12    |
| 10:00      | 0     | 0       | 0       | 2        | 5         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 10    |
| 11:00      | 0     | 0       | 0       | 1        | 2         | 2         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 6     |
| Total      | 0     | 0       | 81      | 276      | 849       | 491       | 200       | 24        | 8         | 3         | 2         | 1         | 0         | 1    | 1936  |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 12    |
|                      | 14    |
|                      | 17    |
|                      | 19    |
| Mean Speed (Average) | 14.5  |
| 10 MPH Pace Speed    | 9-18  |
| Number in Pace       | 1679  |
| Percent in Pace      | 86.7% |
| Number > 15 MPH      | 730   |
| Percent > 15 MPH     | 37.7% |



**Accurate Counts**  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: Combined

52933002

| 11/11/2022 | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time       | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM   | 0     | 0       | 0       | 2        | 0         | 1         | 1         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 5     |
| 1:00       | 0     | 0       | 0       | 0        | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 2:00       | 0     | 0       | 0       | 1        | 1         | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 4     |
| 3:00       | 0     | 0       | 0       | 0        | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 4:00       | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00       | 0     | 0       | 0       | 0        | 10        | 2         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 13    |
| 6:00       | 0     | 0       | 0       | 9        | 17        | 10        | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 39    |
| 7:00       | 0     | 0       | 0       | 9        | 25        | 15        | 6         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 55    |
| 8:00       | 0     | 0       | 0       | 7        | 11        | 10        | 8         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 38    |
| 9:00       | 0     | 0       | 3       | 6        | 18        | 15        | 12        | 0         | 0         | 1         | 1         | 0         | 0         | 0    | 56    |
| 10:00      | 0     | 0       | 2       | 7        | 28        | 14        | 5         | 3         | 1         | 1         | 2         | 1         | 0         | 0    | 64    |
| 11:00      | 0     | 0       | 2       | 4        | 16        | 14        | 9         | 1         | 2         | 0         | 0         | 0         | 0         | 0    | 48    |
| 12:00 PM   | 0     | 0       | 2       | 6        | 28        | 24        | 8         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 69    |
| 1:00       | 0     | 0       | 0       | 7        | 20        | 16        | 14        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 57    |
| 2:00       | 0     | 0       | 4       | 10       | 20        | 5         | 12        | 3         | 0         | 1         | 0         | 0         | 0         | 0    | 55    |
| 3:00       | 0     | 0       | 0       | 4        | 17        | 14        | 7         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 44    |
| 4:00       | 0     | 0       | 0       | 4        | 19        | 21        | 15        | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 59    |
| 5:00       | 0     | 0       | 1       | 3        | 19        | 17        | 5         | 0         | 0         | 1         | 0         | 0         | 0         | 0    | 46    |
| 6:00       | 0     | 0       | 0       | 2        | 21        | 5         | 7         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 36    |
| 7:00       | 0     | 0       | 0       | 4        | 9         | 7         | 4         | 1         | 1         | 0         | 0         | 0         | 0         | 0    | 26    |
| 8:00       | 0     | 0       | 0       | 3        | 8         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 14    |
| 9:00       | 0     | 0       | 0       | 1        | 1         | 0         | 2         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 5     |
| 10:00      | 0     | 0       | 0       | 3        | 6         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 12    |
| 11:00      | 0     | 0       | 0       | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 0     |
| Total      | 0     | 0       | 14      | 92       | 297       | 198       | 119       | 11        | 9         | 5         | 3         | 1         | 0         | 0    | 749   |

|                      |       |
|----------------------|-------|
| Percentile           | 15th  |
| Speed                | 12    |
|                      | 50th  |
|                      | 15    |
|                      | 85th  |
|                      | 18    |
|                      | 95th  |
|                      | 20    |
| Mean Speed (Average) | 15.3  |
| 10 MPH Pace Speed    | 11-20 |
| Number in Pace       | 644   |
| Percent in Pace      | 86.0% |
| Number > 15 MPH      | 346   |
| Percent > 15 MPH     | 46.2% |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH  
Direction: Combined

52933002

| 11/12/2022           | 0 - 3 | > 3 - 6 | > 6 - 9 | > 9 - 12 | > 12 - 15 | > 15 - 18 | > 18 - 21 | > 21 - 24 | > 24 - 27 | > 27 - 30 | > 30 - 33 | > 33 - 36 | > 36 - 39 | > 39 | Total |
|----------------------|-------|---------|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|
| Time                 | MPH   | MPH     | MPH     | MPH      | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH       | MPH  |       |
| 12:00 AM             | 0     | 0       | 0       | 1        | 2         | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 4     |
| 1:00                 | 0     | 0       | 0       | 0        | 0         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 2     |
| 2:00                 | 0     | 0       | 0       | 2        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 3     |
| 3:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 4:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 5:00                 | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| 6:00                 | 0     | 0       | 0       | 2        | 7         | 5         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 16    |
| 7:00                 | 0     | 0       | 0       | 0        | 4         | 7         | 4         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 15    |
| 8:00                 | 0     | 0       | 0       | 3        | 12        | 11        | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 29    |
| 9:00                 | 0     | 0       | 2       | 7        | 18        | 15        | 13        | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 56    |
| 10:00                | 0     | 0       | 1       | 11       | 11        | 14        | 8         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 47    |
| 11:00                | 0     | 0       | 0       | 7        | 14        | 11        | 8         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 41    |
| 12:00 PM             | 0     | 0       | 0       | 4        | 20        | 5         | 3         | 2         | 0         | 0         | 0         | 0         | 0         | 0    | 34    |
| 1:00                 | 0     | 0       | 0       | 6        | 18        | 14        | 11        | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 50    |
| 2:00                 | 0     | 0       | 0       | 1        | 9         | 14        | 6         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 30    |
| 3:00                 | 0     | 0       | 0       | 2        | 7         | 15        | 2         | 2         | 1         | 0         | 0         | 0         | 0         | 0    | 29    |
| 4:00                 | 0     | 0       | 0       | 4        | 10        | 13        | 1         | 1         | 0         | 0         | 0         | 0         | 0         | 0    | 29    |
| 5:00                 | 0     | 0       | 1       | 4        | 22        | 8         | 6         | 0         | 1         | 0         | 0         | 0         | 0         | 0    | 42    |
| 6:00                 | 0     | 0       | 0       | 7        | 18        | 15        | 4         | 0         | 2         | 1         | 0         | 0         | 0         | 0    | 47    |
| 7:00                 | 0     | 0       | 0       | 1        | 9         | 9         | 2         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 21    |
| 8:00                 | 0     | 0       | 0       | 0        | 3         | 2         | 3         | 0         | 0         | 0         | 1         | 0         | 0         | 0    | 9     |
| 9:00                 | 0     | 0       | 0       | 2        | 7         | 4         | 3         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 16    |
| 10:00                | 0     | 0       | 0       | 2        | 7         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 9     |
| 11:00                | 0     | 0       | 0       | 0        | 1         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0    | 1     |
| Total                | 0     | 0       | 4       | 66       | 203       | 165       | 79        | 8         | 6         | 1         | 1         | 0         | 0         | 0    | 533   |
| Percentile           |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
|                      |       |         |         | 12       | 15        | 18        | 20        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 15.3     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 11-20    |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 469      |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 88.0%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 260      |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 48.8%    |           |           |           |           |           |           |           |           |           |      |       |
| Grand Total          | 0     | 0       | 99      | 434      | 1349      | 854       | 398       | 43        | 23        | 9         | 6         | 2         | 0         | 1    | 3218  |
| Stats                |       |         |         |          |           |           |           |           |           |           |           |           |           |      |       |
| Percentile           |       |         |         | 15th     | 50th      | 85th      | 95th      |           |           |           |           |           |           |      |       |
| Speed                |       |         |         | 12       | 15        | 18        | 19        |           |           |           |           |           |           |      |       |
| Mean Speed (Average) |       |         |         | 14.8     |           |           |           |           |           |           |           |           |           |      |       |
| 10 MPH Pace Speed    |       |         |         | 9-18     |           |           |           |           |           |           |           |           |           |      |       |
| Number in Pace       |       |         |         | 2760     |           |           |           |           |           |           |           |           |           |      |       |
| Percent in Pace      |       |         |         | 85.8%    |           |           |           |           |           |           |           |           |           |      |       |
| Number > 15 MPH      |       |         |         | 1336     |           |           |           |           |           |           |           |           |           |      |       |
| Percent > 15 MPH     |       |         |         | 41.5%    |           |           |           |           |           |           |           |           |           |      |       |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH

52933002

| 11/10/2022 | NB,     |           | Hour Totals |           | SB,     |           | Hour Totals |           | Combined Totals |           |
|------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time       | Morning | Afternoon | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00      | 0       | 13        |             |           | 1       | 9         |             |           |                 |           |
| 12:15      | 0       | 20        |             |           | 2       | 22        |             |           |                 |           |
| 12:30      | 1       | 12        |             |           | 0       | 10        |             |           |                 |           |
| 12:45      | 0       | 11        | 1           | 56        | 0       | 5         | 3           | 46        | 4               | 102       |
| 1:00       | 0       | 12        |             |           | 0       | 11        |             |           |                 |           |
| 1:15       | 0       | 8         |             |           | 0       | 20        |             |           |                 |           |
| 1:30       | 0       | 10        |             |           | 0       | 10        |             |           |                 |           |
| 1:45       | 0       | 22        | 0           | 52        | 0       | 7         | 0           | 48        | 0               | 100       |
| 2:00       | 2       | 27        |             |           | 1       | 45        |             |           |                 |           |
| 2:15       | 0       | 21        |             |           | 0       | 29        |             |           |                 |           |
| 2:30       | 0       | 21        |             |           | 2       | 30        |             |           |                 |           |
| 2:45       | 0       | 22        | 2           | 91        | 0       | 32        | 3           | 136       | 5               | 227       |
| 3:00       | 1       | 28        |             |           | 1       | 25        |             |           |                 |           |
| 3:15       | 0       | 11        |             |           | 0       | 24        |             |           |                 |           |
| 3:30       | 0       | 9         |             |           | 0       | 13        |             |           |                 |           |
| 3:45       | 1       | 10        | 2           | 58        | 0       | 17        | 1           | 79        | 3               | 137       |
| 4:00       | 0       | 12        |             |           | 1       | 20        |             |           |                 |           |
| 4:15       | 0       | 6         |             |           | 0       | 18        |             |           |                 |           |
| 4:30       | 0       | 13        |             |           | 0       | 13        |             |           |                 |           |
| 4:45       | 0       | 18        | 0           | 49        | 0       | 11        | 1           | 62        | 1               | 111       |
| 5:00       | 4       | 16        |             |           | 0       | 23        |             |           |                 |           |
| 5:15       | 2       | 14        |             |           | 1       | 24        |             |           |                 |           |
| 5:30       | 1       | 9         |             |           | 0       | 11        |             |           |                 |           |
| 5:45       | 5       | 9         | 12          | 48        | 2       | 9         | 3           | 67        | 15              | 115       |
| 6:00       | 11      | 4         |             |           | 0       | 4         |             |           |                 |           |
| 6:15       | 19      | 6         |             |           | 3       | 12        |             |           |                 |           |
| 6:30       | 17      | 7         |             |           | 2       | 2         |             |           |                 |           |
| 6:45       | 29      | 8         | 76          | 25        | 5       | 5         | 10          | 23        | 86              | 48        |
| 7:00       | 72      | 3         |             |           | 23      | 4         |             |           |                 |           |
| 7:15       | 162     | 4         |             |           | 53      | 3         |             |           |                 |           |
| 7:30       | 67      | 5         |             |           | 32      | 5         |             |           |                 |           |
| 7:45       | 63      | 9         | 364         | 21        | 38      | 3         | 146         | 15        | 510             | 36        |
| 8:00       | 39      | 5         |             |           | 22      | 16        |             |           |                 |           |
| 8:15       | 26      | 4         |             |           | 17      | 2         |             |           |                 |           |
| 8:30       | 8       | 4         |             |           | 6       | 7         |             |           |                 |           |
| 8:45       | 9       | 0         | 82          | 13        | 8       | 1         | 53          | 26        | 135             | 39        |
| 9:00       | 14      | 2         |             |           | 6       | 0         |             |           |                 |           |
| 9:15       | 6       | 2         |             |           | 8       | 0         |             |           |                 |           |
| 9:30       | 13      | 3         |             |           | 4       | 3         |             |           |                 |           |
| 9:45       | 6       | 0         | 39          | 7         | 5       | 2         | 23          | 5         | 62              | 12        |
| 10:00      | 10      | 2         |             |           | 5       | 1         |             |           |                 |           |
| 10:15      | 2       | 3         |             |           | 12      | 0         |             |           |                 |           |
| 10:30      | 5       | 1         |             |           | 5       | 0         |             |           |                 |           |
| 10:45      | 17      | 1         | 34          | 7         | 7       | 2         | 29          | 3         | 63              | 10        |
| 11:00      | 9       | 1         |             |           | 25      | 0         |             |           |                 |           |
| 11:15      | 13      | 0         |             |           | 18      | 1         |             |           |                 |           |
| 11:30      | 16      | 0         |             |           | 9       | 2         |             |           |                 |           |
| 11:45      | 10      | 1         | 48          | 2         | 9       | 1         | 61          | 4         | 109             | 6         |
| Total      | 660     | 429       |             |           | 333     | 514       |             |           | 993             | 943       |
| Percent    | 60.6%   | 39.4%     |             |           | 39.3%   | 60.7%     |             |           | 51.3%           | 48.7%     |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH

52933002

| 11/11/2022 | NB,     |           | Hour Totals |           | SB,     |           | Hour Totals |           | Combined Totals |           |
|------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time       | Morning | Afternoon | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00      |         | 2         |             | 6         |         | 0         |             | 8         |                 |           |
| 12:15      |         | 1         |             | 12        |         | 0         |             | 8         |                 |           |
| 12:30      |         | 0         |             | 9         |         | 1         |             | 11        |                 |           |
| 12:45      |         | 0         |             | 9         | 3       | 36        | 1           | 6         | 2               | 33        |
| 1:00       |         | 0         |             | 12        |         |           | 0           | 2         |                 |           |
| 1:15       |         | 1         |             | 4         |         |           | 0           | 6         |                 |           |
| 1:30       |         | 0         |             | 5         |         |           | 0           | 9         |                 |           |
| 1:45       |         | 0         |             | 11        | 1       | 32        | 0           | 8         | 0               | 25        |
| 2:00       |         | 0         |             | 7         |         |           | 1           | 9         |                 |           |
| 2:15       |         | 0         |             | 10        |         |           | 0           | 3         |                 |           |
| 2:30       |         | 0         |             | 3         |         |           | 2           | 12        |                 |           |
| 2:45       |         | 1         |             | 3         | 1       | 23        | 0           | 8         | 3               | 32        |
| 3:00       |         | 0         |             | 6         |         |           | 1           | 10        |                 |           |
| 3:15       |         | 0         |             | 1         |         |           | 0           | 2         |                 |           |
| 3:30       |         | 0         |             | 4         |         |           | 0           | 9         |                 |           |
| 3:45       |         | 1         |             | 6         | 1       | 17        | 0           | 6         | 1               | 27        |
| 4:00       |         | 0         |             | 4         |         |           | 0           | 16        |                 |           |
| 4:15       |         | 0         |             | 2         |         |           | 0           | 7         |                 |           |
| 4:30       |         | 0         |             | 7         |         |           | 0           | 10        |                 |           |
| 4:45       |         | 0         |             | 8         | 0       | 21        | 1           | 5         | 1               | 38        |
| 5:00       |         | 1         |             | 5         |         |           | 0           | 11        |                 |           |
| 5:15       |         | 1         |             | 6         |         |           | 2           | 8         |                 |           |
| 5:30       |         | 2         |             | 4         |         |           | 1           | 3         |                 |           |
| 5:45       |         | 4         |             | 5         | 8       | 20        | 2           | 4         | 5               | 26        |
| 6:00       |         | 4         |             | 4         |         |           | 0           | 3         |                 |           |
| 6:15       |         | 15        |             | 6         |         |           | 1           | 6         |                 |           |
| 6:30       |         | 11        |             | 4         |         |           | 0           | 6         |                 |           |
| 6:45       |         | 6         |             | 4         | 36      | 18        | 2           | 3         | 3               | 18        |
| 7:00       |         | 7         |             | 2         |         |           | 1           | 2         |                 |           |
| 7:15       |         | 7         |             | 5         |         |           | 3           | 4         |                 |           |
| 7:30       |         | 12        |             | 3         |         |           | 6           | 5         |                 |           |
| 7:45       |         | 16        |             | 4         | 42      | 14        | 3           | 1         | 13              | 12        |
| 8:00       |         | 8         |             | 1         |         |           | 2           | 0         |                 |           |
| 8:15       |         | 10        |             | 3         |         |           | 4           | 1         |                 |           |
| 8:30       |         | 3         |             | 2         |         |           | 4           | 2         |                 |           |
| 8:45       |         | 5         |             | 4         | 26      | 10        | 2           | 1         | 12              | 4         |
| 9:00       |         | 5         |             | 2         |         |           | 8           | 0         |                 |           |
| 9:15       |         | 12        |             | 0         |         |           | 7           | 0         |                 |           |
| 9:30       |         | 9         |             | 1         |         |           | 3           | 1         |                 |           |
| 9:45       |         | 8         |             | 0         | 34      | 3         | 4           | 1         | 22              | 2         |
| 10:00      |         | 8         |             | 2         |         |           | 6           | 1         |                 |           |
| 10:15      |         | 4         |             | 1         |         |           | 8           | 2         |                 |           |
| 10:30      |         | 12        |             | 2         |         |           | 8           | 1         |                 |           |
| 10:45      |         | 5         |             | 3         | 29      | 8         | 13          | 0         | 35              | 4         |
| 11:00      |         | 6         |             | 0         |         |           | 5           | 0         |                 |           |
| 11:15      |         | 3         |             | 0         |         |           | 8           | 0         |                 |           |
| 11:30      |         | 3         |             | 0         |         |           | 8           | 0         |                 |           |
| 11:45      |         | 9         |             | 0         | 21      | 0         | 6           | 0         | 27              | 0         |
| Total      |         | 202       |             | 202       |         |           | 124         | 221       |                 |           |
| Percent    |         | 50.0%     |             | 50.0%     |         |           | 35.9%       | 64.1%     |                 |           |
|            |         |           |             |           |         |           |             |           | 326             | 423       |
|            |         |           |             |           |         |           |             |           | 43.5%           | 56.5%     |



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH

52933002

| 11/12/2022  |         | NB,       |       | Hour Totals |           | SB,     |           | Hour Totals |           | Combined Totals |           |
|-------------|---------|-----------|-------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| Time        | Morning | Afternoon |       | Morning     | Afternoon | Morning | Afternoon | Morning     | Afternoon | Morning         | Afternoon |
| 12:00       |         | 0         | 6     |             |           | 1       | 4         |             |           |                 |           |
| 12:15       |         | 0         | 4     |             |           | 0       | 5         |             |           |                 |           |
| 12:30       |         | 0         | 7     |             |           | 0       | 2         |             |           |                 |           |
| 12:45       |         | 2         | 4     | 2           | 21        | 1       | 2         | 2           | 13        | 4               | 34        |
| 1:00        |         | 0         | 5     |             |           | 0       | 4         |             |           |                 |           |
| 1:15        |         | 0         | 6     |             |           | 1       | 13        |             |           |                 |           |
| 1:30        |         | 0         | 9     |             |           | 1       | 2         |             |           |                 |           |
| 1:45        |         | 0         | 8     | 0           | 28        | 0       | 3         | 2           | 22        | 2               | 50        |
| 2:00        |         | 1         | 7     |             |           | 1       | 6         |             |           |                 |           |
| 2:15        |         | 0         | 5     |             |           | 0       | 4         |             |           |                 |           |
| 2:30        |         | 1         | 3     |             |           | 0       | 0         |             |           |                 |           |
| 2:45        |         | 0         | 3     | 2           | 18        | 0       | 2         | 1           | 12        | 3               | 30        |
| 3:00        |         | 0         | 3     |             |           | 0       | 3         |             |           |                 |           |
| 3:15        |         | 0         | 6     |             |           | 0       | 0         |             |           |                 |           |
| 3:30        |         | 0         | 7     |             |           | 0       | 3         |             |           |                 |           |
| 3:45        |         | 0         | 2     | 0           | 18        | 1       | 5         | 1           | 11        | 1               | 29        |
| 4:00        |         | 0         | 5     |             |           | 0       | 3         |             |           |                 |           |
| 4:15        |         | 0         | 7     |             |           | 0       | 3         |             |           |                 |           |
| 4:30        |         | 0         | 4     |             |           | 1       | 1         |             |           |                 |           |
| 4:45        |         | 0         | 6     | 0           | 22        | 0       | 0         | 1           | 7         | 1               | 29        |
| 5:00        |         | 0         | 5     |             |           | 0       | 2         |             |           |                 |           |
| 5:15        |         | 0         | 5     |             |           | 0       | 5         |             |           |                 |           |
| 5:30        |         | 1         | 5     |             |           | 0       | 3         |             |           |                 |           |
| 5:45        |         | 0         | 13    | 1           | 28        | 0       | 4         | 0           | 14        | 1               | 42        |
| 6:00        |         | 4         | 6     |             |           | 1       | 18        |             |           |                 |           |
| 6:15        |         | 5         | 3     |             |           | 0       | 6         |             |           |                 |           |
| 6:30        |         | 3         | 5     |             |           | 1       | 3         |             |           |                 |           |
| 6:45        |         | 2         | 5     | 14          | 19        | 0       | 1         | 2           | 28        | 16              | 47        |
| 7:00        |         | 2         | 2     |             |           | 1       | 4         |             |           |                 |           |
| 7:15        |         | 1         | 1     |             |           | 1       | 5         |             |           |                 |           |
| 7:30        |         | 3         | 0     |             |           | 5       | 0         |             |           |                 |           |
| 7:45        |         | 1         | 5     | 7           | 8         | 1       | 4         | 8           | 13        | 15              | 21        |
| 8:00        |         | 4         | 1     |             |           | 1       | 1         |             |           |                 |           |
| 8:15        |         | 2         | 1     |             |           | 1       | 2         |             |           |                 |           |
| 8:30        |         | 3         | 2     |             |           | 6       | 0         |             |           |                 |           |
| 8:45        |         | 9         | 1     | 18          | 5         | 3       | 1         | 11          | 4         | 29              | 9         |
| 9:00        |         | 1         | 5     |             |           | 5       | 2         |             |           |                 |           |
| 9:15        |         | 3         | 1     |             |           | 2       | 2         |             |           |                 |           |
| 9:30        |         | 12        | 1     |             |           | 6       | 1         |             |           |                 |           |
| 9:45        |         | 17        | 4     | 33          | 11        | 10      | 0         | 23          | 5         | 56              | 16        |
| 10:00       |         | 5         | 2     |             |           | 6       | 0         |             |           |                 |           |
| 10:15       |         | 7         | 3     |             |           | 7       | 0         |             |           |                 |           |
| 10:30       |         | 5         | 2     |             |           | 3       | 0         |             |           |                 |           |
| 10:45       |         | 7         | 2     | 24          | 9         | 7       | 0         | 23          | 0         | 47              | 9         |
| 11:00       |         | 4         | 1     |             |           | 3       | 0         |             |           |                 |           |
| 11:15       |         | 9         | 0     |             |           | 5       | 1         |             |           |                 |           |
| 11:30       |         | 5         | 1     |             |           | 3       | 0         |             |           |                 |           |
| 11:45       |         | 5         | 0     | 23          | 2         | 7       | 0         | 18          | 1         | 41              | 3         |
| Total       |         | 124       | 189   |             |           | 92      | 130       |             |           | 216             | 319       |
| Percent     |         | 39.6%     | 60.4% |             |           | 41.4%   | 58.6%     |             |           | 40.4%           | 59.6%     |
| Grand Total |         | 986       | 820   |             |           | 549     | 865       |             |           | 1535            | 1685      |
| Percent     |         | 54.6%     | 45.4% |             |           | 38.8%   | 61.2%     |             |           | 47.7%           | 52.3%     |

ADT

ADT: 1,073

AADT: 1,073



Accurate Counts  
978-664-2565

Location : Hanover Street  
Location : North of Evans Drive  
City/State: Lebanon, NH

52933002

| 11/7/2022  | Monday     |     | Tuesday     |     | Wednesday |     | Thursday |      | Friday   |       | Saturday |      | Sunday |     | Week Average |      |
|------------|------------|-----|-------------|-----|-----------|-----|----------|------|----------|-------|----------|------|--------|-----|--------------|------|
| Time       | NB,        | SB, | NB,         | SB, | NB,       | SB, | NB,      | SB,  | NB,      | SB,   | NB,      | SB,  | NB,    | SB, | NB,          | SB,  |
| 12:00 AM   | *          | *   | *           | *   | *         | *   | 1        | 3    | 3        | 2     | 2        | 2    | *      | *   | 2            | 2    |
| 1:00       | *          | *   | *           | *   | *         | *   | 0        | 0    | 1        | 0     | 0        | 2    | *      | *   | 0            | 1    |
| 2:00       | *          | *   | *           | *   | *         | *   | 2        | 3    | 1        | 3     | 2        | 1    | *      | *   | 2            | 2    |
| 3:00       | *          | *   | *           | *   | *         | *   | 2        | 1    | 1        | 1     | 0        | 1    | *      | *   | 1            | 1    |
| 4:00       | *          | *   | *           | *   | *         | *   | 0        | 1    | 0        | 1     | 0        | 1    | *      | *   | 0            | 1    |
| 5:00       | *          | *   | *           | *   | *         | *   | 12       | 3    | 8        | 5     | 1        | 0    | *      | *   | 7            | 3    |
| 6:00       | *          | *   | *           | *   | *         | *   | 76       | 10   | 36       | 3     | 14       | 2    | *      | *   | 42           | 5    |
| 7:00       | *          | *   | *           | *   | *         | *   | 364      | 146  | 42       | 13    | 7        | 8    | *      | *   | 138          | 56   |
| 8:00       | *          | *   | *           | *   | *         | *   | 82       | 53   | 26       | 12    | 18       | 11   | *      | *   | 42           | 25   |
| 9:00       | *          | *   | *           | *   | *         | *   | 39       | 23   | 34       | 22    | 33       | 23   | *      | *   | 35           | 23   |
| 10:00      | *          | *   | *           | *   | *         | *   | 34       | 29   | 29       | 35    | 24       | 23   | *      | *   | 29           | 29   |
| 11:00      | *          | *   | *           | *   | *         | *   | 48       | 61   | 21       | 27    | 23       | 18   | *      | *   | 31           | 35   |
| 12:00 PM   | *          | *   | *           | *   | *         | *   | 56       | 46   | 36       | 33    | 21       | 13   | *      | *   | 38           | 31   |
| 1:00       | *          | *   | *           | *   | *         | *   | 52       | 48   | 32       | 25    | 28       | 22   | *      | *   | 37           | 32   |
| 2:00       | *          | *   | *           | *   | *         | *   | 91       | 136  | 23       | 32    | 18       | 12   | *      | *   | 44           | 60   |
| 3:00       | *          | *   | *           | *   | *         | *   | 58       | 79   | 17       | 27    | 18       | 11   | *      | *   | 31           | 39   |
| 4:00       | *          | *   | *           | *   | *         | *   | 49       | 62   | 21       | 38    | 22       | 7    | *      | *   | 31           | 36   |
| 5:00       | *          | *   | *           | *   | *         | *   | 48       | 67   | 20       | 26    | 28       | 14   | *      | *   | 32           | 36   |
| 6:00       | *          | *   | *           | *   | *         | *   | 25       | 23   | 18       | 18    | 19       | 28   | *      | *   | 21           | 23   |
| 7:00       | *          | *   | *           | *   | *         | *   | 21       | 15   | 14       | 12    | 8        | 13   | *      | *   | 14           | 13   |
| 8:00       | *          | *   | *           | *   | *         | *   | 13       | 26   | 10       | 4     | 5        | 4    | *      | *   | 9            | 11   |
| 9:00       | *          | *   | *           | *   | *         | *   | 7        | 5    | 3        | 2     | 11       | 5    | *      | *   | 7            | 4    |
| 10:00      | *          | *   | *           | *   | *         | *   | 7        | 3    | 8        | 4     | 9        | 0    | *      | *   | 8            | 2    |
| 11:00      | *          | *   | *           | *   | *         | *   | 2        | 4    | 0        | 0     | 1        | 0    | *      | *   | 1            | 1    |
| Total      | 0          | 0   | 0           | 0   | 0         | 0   | 1089     | 847  | 404      | 345   | 312      | 221  | 0      | 0   | 602          | 471  |
| Day        | 0          |     | 0           |     | 0         |     | 1936     |      | 749      |       | 533      |      | 0      |     | 1073         |      |
| AM Peak    |            |     |             |     |           |     | 7:00     | 7:00 | 7:00     | 10:00 | 9:00     | 9:00 |        |     | 7:00         | 7:00 |
| Volume     |            |     |             |     |           |     | 364      | 146  | 42       | 35    | 33       | 23   |        |     | 138          | 56   |
| PM Peak    |            |     |             |     |           |     | 2:00     | 2:00 | 12:00 PM | 4:00  | 1:00     | 6:00 |        |     | 2:00         | 2:00 |
| Volume     |            |     |             |     |           |     | 91       | 136  | 36       | 38    | 28       | 28   |        |     | 44           | 60   |
| Comb Total | 0          |     | 0           |     | 0         |     | 1936     |      | 749      |       | 533      |      | 0      |     | 1073         |      |
| ADT        | ADT: 1,073 |     | AADT: 1,073 |     |           |     |          |      |          |       |          |      |        |     |              |      |



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 07:00 AM    | 21                       | 1    | 4                     | 74    | 0                        | 0     | 100        |
| 07:15 AM    | 54                       | 0    | 0                     | 155   | 0                        | 0     | 209        |
| 07:30 AM    | 33                       | 0    | 0                     | 67    | 0                        | 0     | 100        |
| 07:45 AM    | 34                       | 1    | 0                     | 64    | 0                        | 1     | 100        |
| Total       | 142                      | 2    | 4                     | 360   | 0                        | 1     | 509        |
| 08:00 AM    | 22                       | 1    | 0                     | 41    | 1                        | 0     | 65         |
| 08:15 AM    | 17                       | 1    | 0                     | 22    | 0                        | 0     | 40         |
| 08:30 AM    | 6                        | 0    | 0                     | 8     | 0                        | 1     | 15         |
| 08:45 AM    | 8                        | 0    | 1                     | 11    | 0                        | 0     | 20         |
| Total       | 53                       | 2    | 1                     | 82    | 1                        | 1     | 140        |
| Grand Total | 195                      | 4    | 5                     | 442   | 1                        | 2     | 649        |
| Apprch %    | 98                       | 2    | 1.1                   | 98.9  | 33.3                     | 66.7  |            |
| Total %     | 30                       | 0.6  | 0.8                   | 68.1  | 0.2                      | 0.3   |            |
| Cars        | 190                      | 4    | 5                     | 441   | 1                        | 2     | 643        |
| % Cars      | 97.4                     | 100  | 100                   | 99.8  | 100                      | 100   | 99.1       |
| Trucks      | 5                        | 0    | 0                     | 1     | 0                        | 0     | 6          |
| % Trucks    | 2.6                      | 0    | 0                     | 0.2   | 0                        | 0     | 0.9        |

|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                          |      |            |                       |       |            |                          |       |            |            |
| 07:00 AM                                                   | 21                       | 1    | 22         | 4                     | 74    | 78         | 0                        | 0     | 0          | 100        |
| 07:15 AM                                                   | 54                       | 0    | 54         | 0                     | 155   | 155        | 0                        | 0     | 0          | 209        |
| 07:30 AM                                                   | 33                       | 0    | 33         | 0                     | 67    | 67         | 0                        | 0     | 0          | 100        |
| 07:45 AM                                                   | 34                       | 1    | 35         | 0                     | 64    | 64         | 0                        | 1     | 1          | 100        |
| Total Volume                                               | 142                      | 2    | 144        | 4                     | 360   | 364        | 0                        | 1     | 1          | 509        |
| % App. Total                                               | 98.6                     | 1.4  |            | 1.1                   | 98.9  |            | 0                        | 100   |            |            |
| PHF                                                        | .657                     | .500 | .667       | .250                  | .581  | .587       | .000                     | .250  | .250       | .609       |
| Cars                                                       | 137                      | 2    | 139        | 4                     | 360   | 364        | 0                        | 1     | 1          | 504        |
| % Cars                                                     | 96.5                     | 100  | 96.5       | 100                   | 100   | 100        | 0                        | 100   | 100        | 99.0       |
| Trucks                                                     | 5                        | 0    | 5          | 0                     | 0     | 0          | 0                        | 0     | 0          | 5          |
| % Trucks                                                   | 3.5                      | 0    | 3.5        | 0                     | 0     | 0          | 0                        | 0     | 0          | 1.0        |

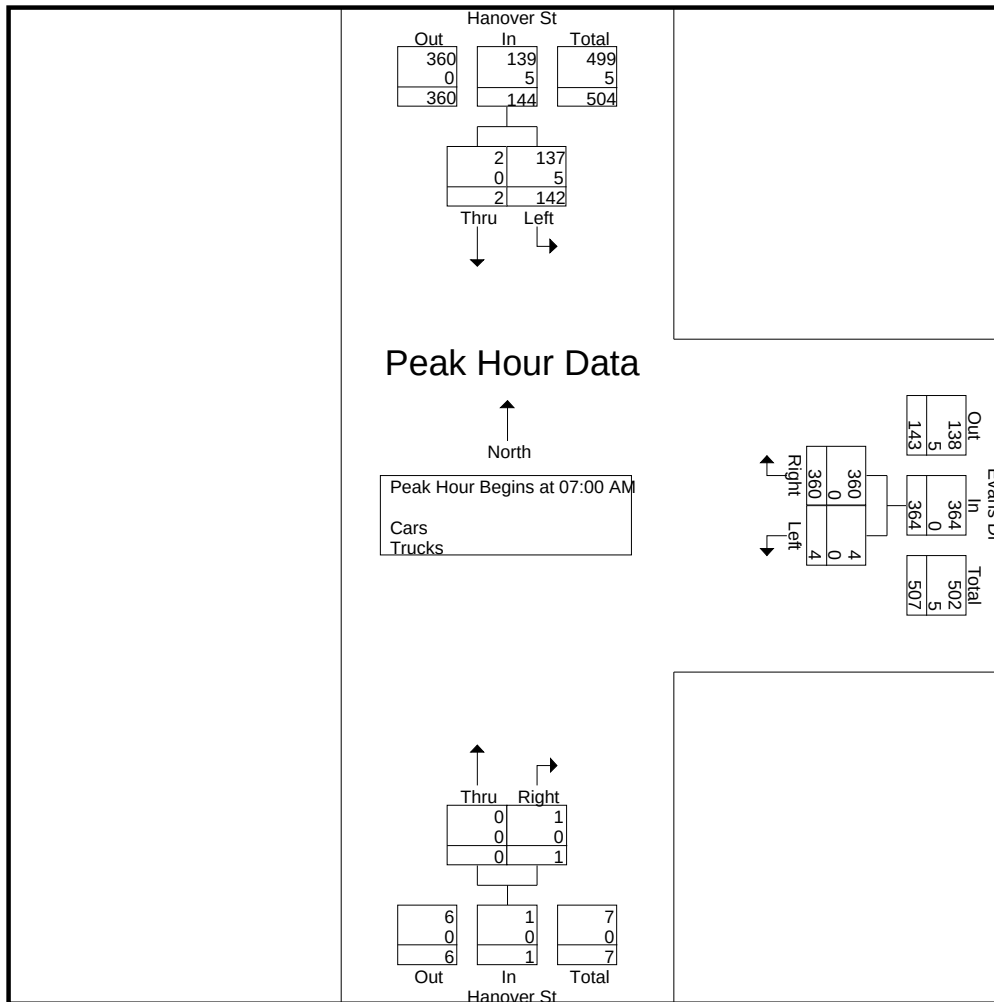


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

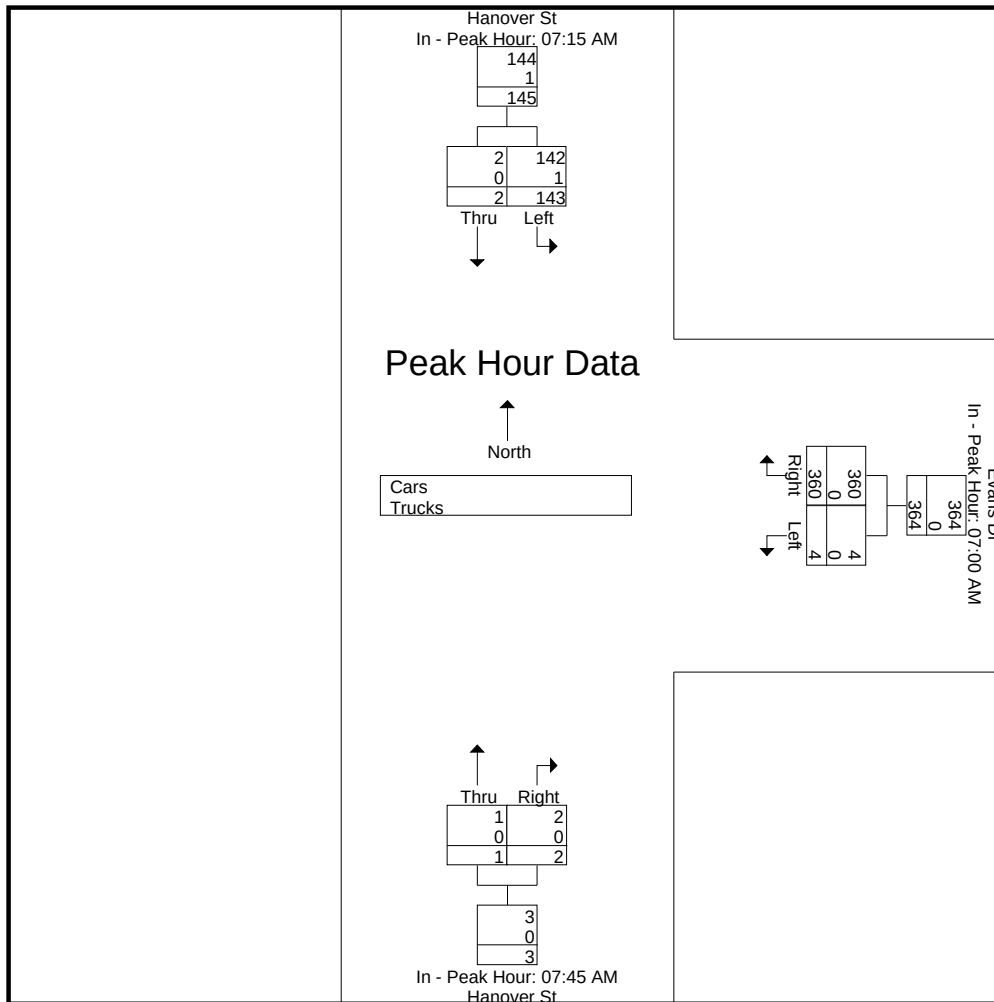
|              | 07:15 AM |      |      | 07:00 AM |      |      | 07:45 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 54       | 0    | 54   | 4        | 74   | 78   | 0        | 1    | 1    |
| +15 mins.    | 33       | 0    | 33   | 0        | 155  | 155  | 1        | 0    | 1    |
| +30 mins.    | 34       | 1    | 35   | 0        | 67   | 67   | 0        | 0    | 0    |
| +45 mins.    | 22       | 1    | 23   | 0        | 64   | 64   | 0        | 1    | 1    |
| Total Volume | 143      | 2    | 145  | 4        | 360  | 364  | 1        | 2    | 3    |
| % App. Total | 98.6     | 1.4  |      | 1.1      | 98.9 |      | 33.3     | 66.7 |      |
| PHF          | .662     | .500 | .671 | .250     | .581 | .587 | .250     | .500 | .750 |
| Cars         | 142      | 2    | 144  | 4        | 360  | 364  | 1        | 2    | 3    |
| % Cars       | 99.3     | 100  | 99.3 | 100      | 100  | 100  | 100      | 100  | 100  |
| Trucks       | 1        | 0    | 1    | 0        | 0    | 0    | 0        | 0    | 0    |
| % Trucks     | 0.7      | 0    | 0.7  | 0        | 0    | 0    | 0        | 0    | 0    |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 07:00 AM    | 17                       | 1    | 4                     | 74    | 0                        | 0     | 96         |
| 07:15 AM    | 54                       | 0    | 0                     | 155   | 0                        | 0     | 209        |
| 07:30 AM    | 33                       | 0    | 0                     | 67    | 0                        | 0     | 100        |
| 07:45 AM    | 33                       | 1    | 0                     | 64    | 0                        | 1     | 99         |
| Total       | 137                      | 2    | 4                     | 360   | 0                        | 1     | 504        |
| 08:00 AM    | 22                       | 1    | 0                     | 41    | 1                        | 0     | 65         |
| 08:15 AM    | 17                       | 1    | 0                     | 22    | 0                        | 0     | 40         |
| 08:30 AM    | 6                        | 0    | 0                     | 7     | 0                        | 1     | 14         |
| 08:45 AM    | 8                        | 0    | 1                     | 11    | 0                        | 0     | 20         |
| Total       | 53                       | 2    | 1                     | 81    | 1                        | 1     | 139        |
| Grand Total | 190                      | 4    | 5                     | 441   | 1                        | 2     | 643        |
| Apprch %    | 97.9                     | 2.1  | 1.1                   | 98.9  | 33.3                     | 66.7  |            |
| Total %     | 29.5                     | 0.6  | 0.8                   | 68.6  | 0.2                      | 0.3   |            |

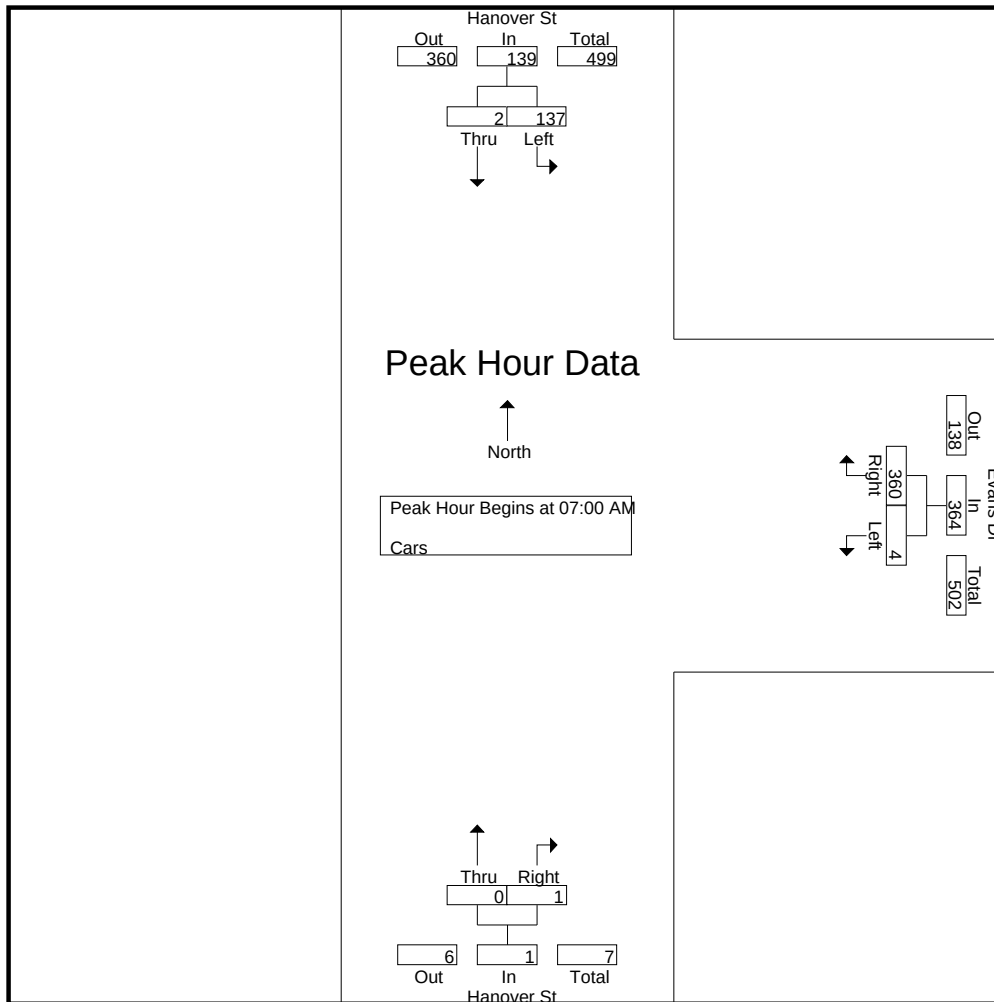
|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                          |      |            |                       |       |            |                          |       |            |            |
| 07:00 AM                                                   | 17                       | 1    | 18         | 4                     | 74    | 78         | 0                        | 0     | 0          | 96         |
| 07:15 AM                                                   | 54                       | 0    | 54         | 0                     | 155   | 155        | 0                        | 0     | 0          | 209        |
| 07:30 AM                                                   | 33                       | 0    | 33         | 0                     | 67    | 67         | 0                        | 0     | 0          | 100        |
| 07:45 AM                                                   | 33                       | 1    | 34         | 0                     | 64    | 64         | 0                        | 1     | 1          | 99         |
| Total Volume                                               | 137                      | 2    | 139        | 4                     | 360   | 364        | 0                        | 1     | 1          | 504        |
| % App. Total                                               | 98.6                     | 1.4  |            | 1.1                   | 98.9  |            | 0                        | 100   |            |            |
| PHF                                                        | .634                     | .500 | .644       | .250                  | .581  | .587       | .000                     | .250  | .250       | .603       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 5



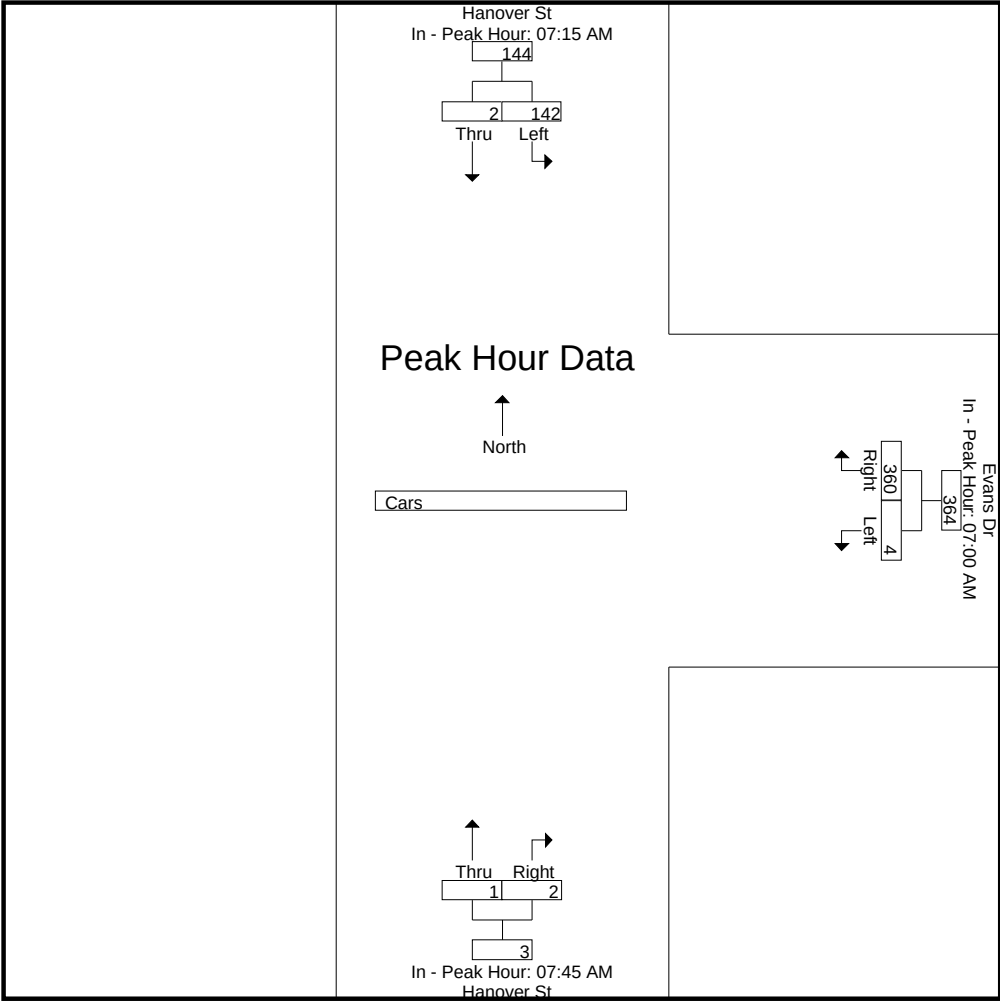
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:15 AM  |          |           | 07:00 AM |            |            | 07:45 AM |          |          |
|--------------|-----------|----------|-----------|----------|------------|------------|----------|----------|----------|
| +0 mins.     | <b>54</b> | 0        | <b>54</b> | <b>4</b> | 74         | 78         | 0        | <b>1</b> | <b>1</b> |
| +15 mins.    | 33        | 0        | 33        | 0        | <b>155</b> | <b>155</b> | <b>1</b> | 0        | 1        |
| +30 mins.    | 33        | <b>1</b> | 34        | 0        | 67         | 67         | 0        | 0        | 0        |
| +45 mins.    | 22        | 1        | 23        | 0        | 64         | 64         | 0        | 1        | 1        |
| Total Volume | 142       | 2        | 144       | 4        | 360        | 364        | 1        | 2        | 3        |
| % App. Total | 98.6      | 1.4      |           | 1.1      | 98.9       |            | 33.3     | 66.7     |          |
| PHF          | .657      | .500     | .667      | .250     | .581       | .587       | .250     | .500     | .750     |



N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 6



**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 7

**Groups Printed- Trucks**

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 07:00 AM    | 4                        | 0    | 0                     | 0     | 0                        | 0     | 4          |
| 07:15 AM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 07:30 AM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 07:45 AM    | 1                        | 0    | 0                     | 0     | 0                        | 0     | 1          |
| Total       | 5                        | 0    | 0                     | 0     | 0                        | 0     | 5          |
| 08:00 AM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 08:15 AM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 08:30 AM    | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 08:45 AM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| Grand Total | 5                        | 0    | 0                     | 1     | 0                        | 0     | 6          |
| Apprch %    | 100                      | 0    | 0                     | 100   | 0                        | 0     |            |
| Total %     | 83.3                     | 0    | 0                     | 16.7  | 0                        | 0     |            |

|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                          |      |            |                       |       |            |                          |       |            |            |
| 07:00 AM                                                   | 4                        | 0    | 4          | 0                     | 0     | 0          | 0                        | 0     | 0          | 4          |
| 07:15 AM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 0     | 0          | 0          |
| 07:30 AM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 0     | 0          | 0          |
| 07:45 AM                                                   | 1                        | 0    | 1          | 0                     | 0     | 0          | 0                        | 0     | 0          | 1          |
| Total Volume                                               | 5                        | 0    | 5          | 0                     | 0     | 0          | 0                        | 0     | 0          | 5          |
| % App. Total                                               | 100                      | 0    |            | 0                     | 0     |            | 0                        | 0     |            |            |
| PHF                                                        | .313                     | .000 | .313       | .000                  | .000  | .000       | .000                     | .000  | .000       | .313       |

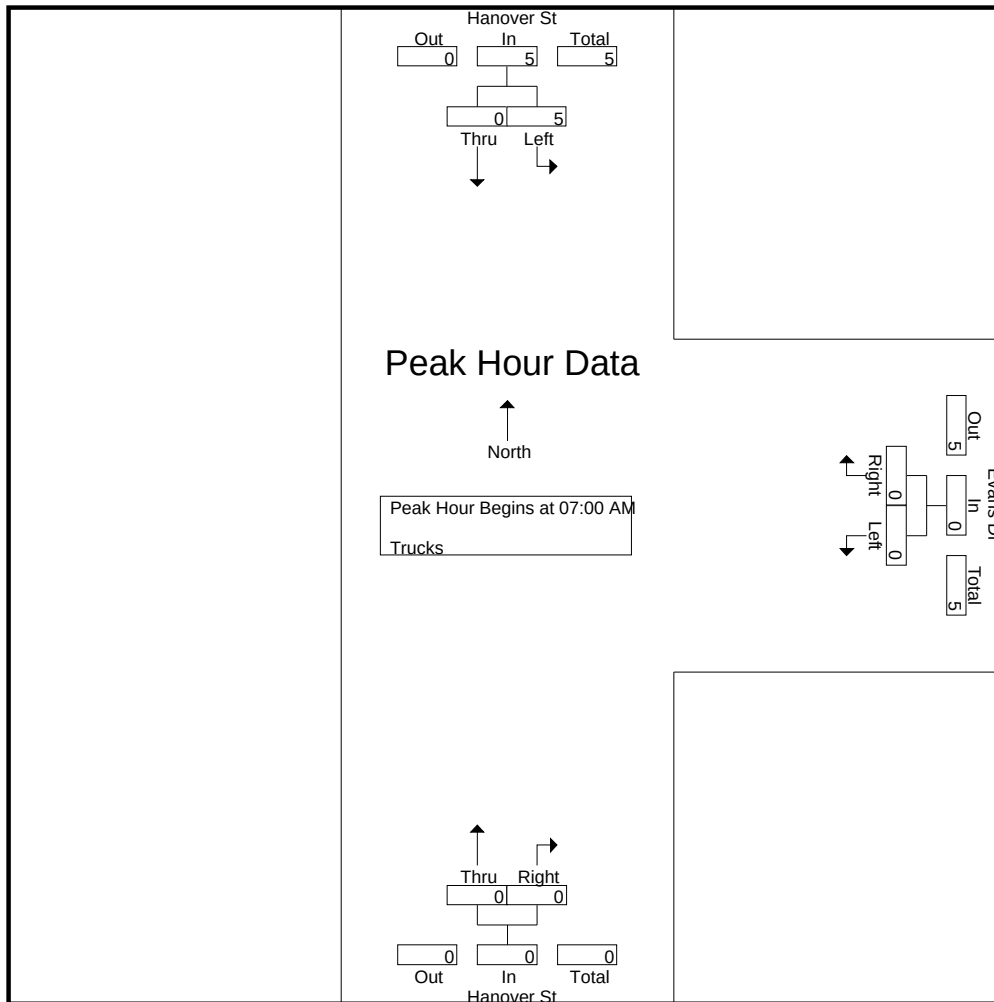


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 8

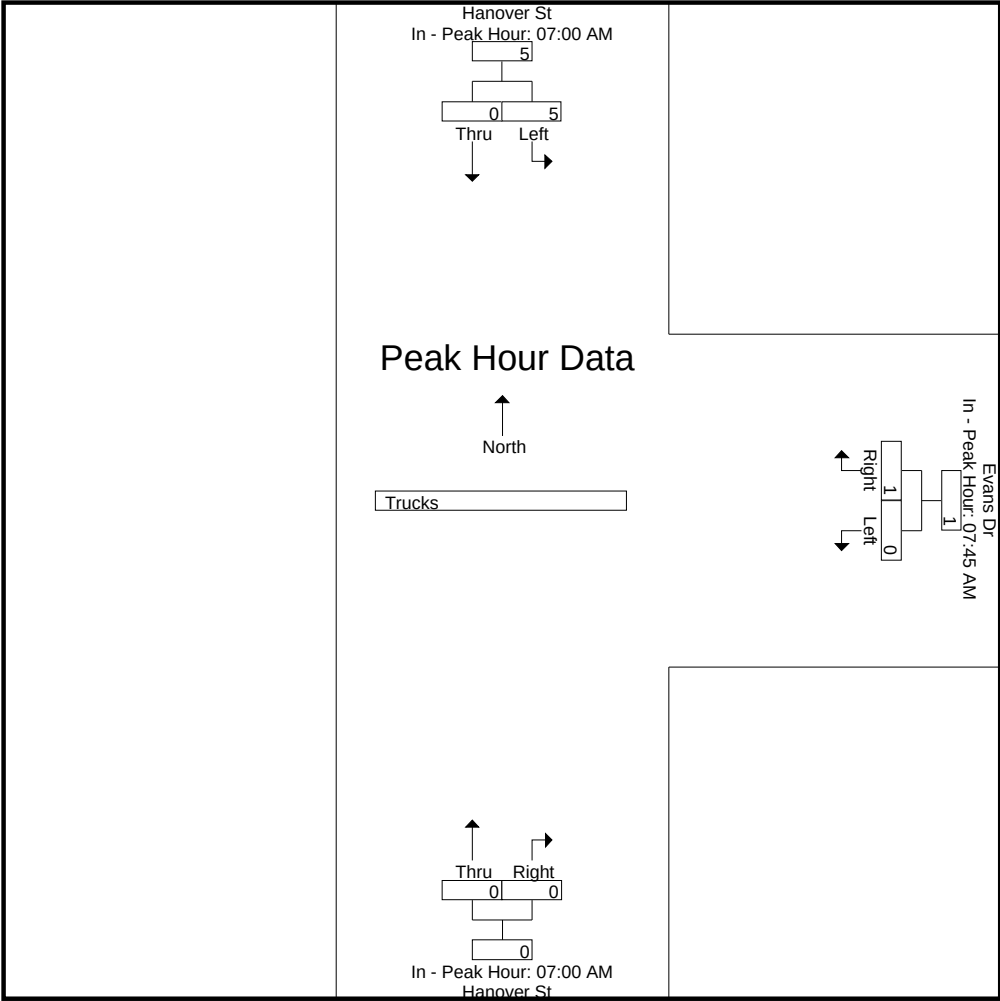


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:45 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 4        | 0    | 4    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 1        | 0    | 1    | 0        | 1    | 1    | 0        | 0    | 0    |
| Total Volume | 5        | 0    | 5    | 0        | 1    | 1    | 0        | 0    | 0    |
| % App. Total | 100      | 0    |      | 0        | 100  |      | 0        | 0    |      |
| PHF          | .313     | .000 | .313 | .000     | .250 | .250 | .000     | .000 | .000 |

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Evans Dr<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|-----------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                  | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 07:00 AM    | 0                        | 0    | 0    | 0                     | 0     | 13   | 1                        | 0     | 0    | 13           | 1            | 14         |
| 07:15 AM    | 0                        | 1    | 0    | 0                     | 0     | 9    | 4                        | 0     | 0    | 9            | 5            | 14         |
| 07:30 AM    | 0                        | 1    | 0    | 0                     | 0     | 11   | 1                        | 0     | 0    | 11           | 2            | 13         |
| 07:45 AM    | 0                        | 2    | 0    | 0                     | 0     | 20   | 4                        | 0     | 0    | 20           | 6            | 26         |
| Total       | 0                        | 4    | 0    | 0                     | 0     | 53   | 10                       | 0     | 0    | 53           | 14           | 67         |
| 08:00 AM    | 0                        | 0    | 0    | 1                     | 0     | 7    | 1                        | 0     | 0    | 7            | 2            | 9          |
| 08:15 AM    | 0                        | 0    | 0    | 0                     | 0     | 2    | 0                        | 0     | 0    | 2            | 0            | 2          |
| 08:30 AM    | 0                        | 0    | 0    | 0                     | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 08:45 AM    | 0                        | 0    | 0    | 0                     | 0     | 3    | 1                        | 0     | 0    | 3            | 1            | 4          |
| Total       | 0                        | 0    | 0    | 1                     | 0     | 12   | 2                        | 0     | 0    | 12           | 3            | 15         |
| Grand Total | 0                        | 4    | 0    | 1                     | 0     | 65   | 12                       | 0     | 0    | 65           | 17           | 82         |
| Apprch %    | 0                        | 100  |      | 100                   | 0     |      | 100                      | 0     |      |              |              |            |
| Total %     | 0                        | 23.5 |      | 5.9                   | 0     |      | 70.6                     | 0     |      | 79.3         | 20.7         |            |

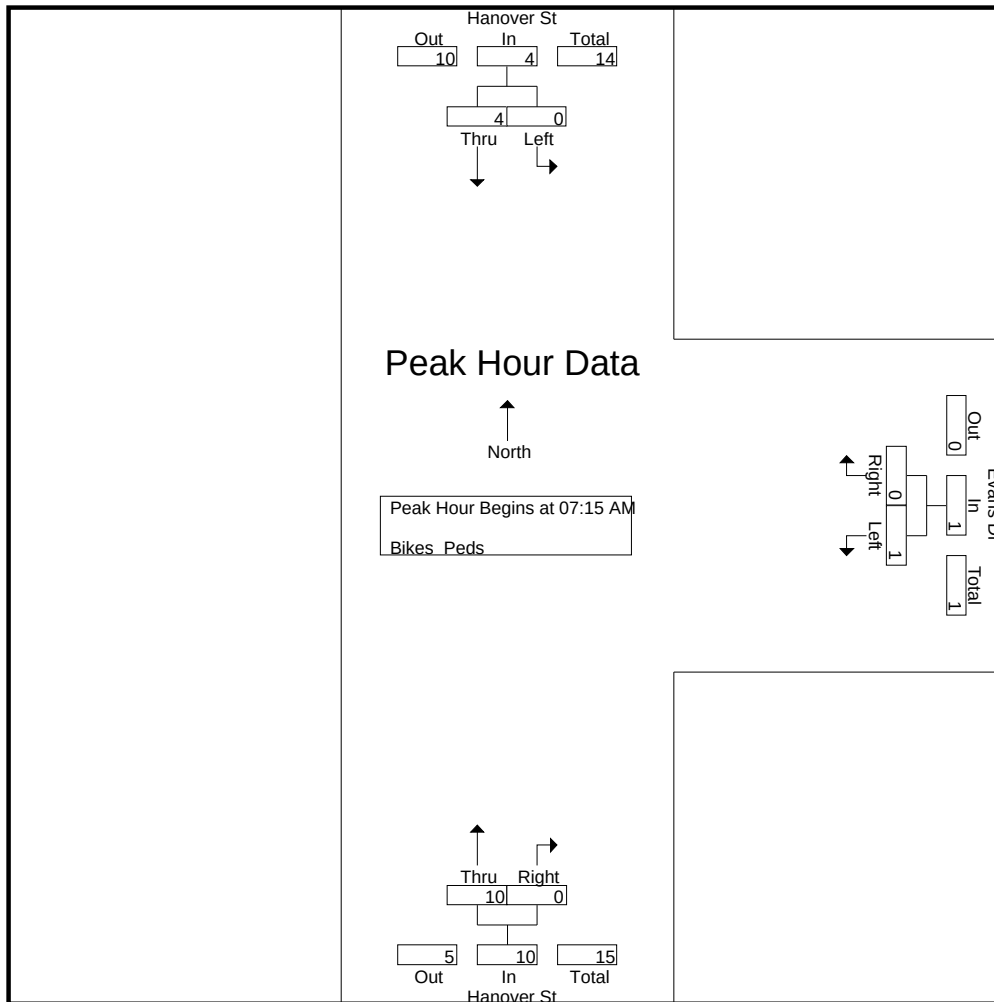
|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                          |      |            |                       |       |            |                          |       |            |            |
| 07:15 AM                                                   | 0                        | 1    | 1          | 0                     | 0     | 0          | 4                        | 0     | 4          | 5          |
| 07:30 AM                                                   | 0                        | 1    | 1          | 0                     | 0     | 0          | 1                        | 0     | 1          | 2          |
| 07:45 AM                                                   | 0                        | 2    | 2          | 0                     | 0     | 0          | 4                        | 0     | 4          | 6          |
| 08:00 AM                                                   | 0                        | 0    | 0          | 1                     | 0     | 1          | 1                        | 0     | 1          | 2          |
| Total Volume                                               | 0                        | 4    | 4          | 1                     | 0     | 1          | 10                       | 0     | 10         | 15         |
| % App. Total                                               | 0                        | 100  |            | 100                   | 0     |            | 100                      | 0     |            |            |
| PHF                                                        | .000                     | .500 | .500       | .250                  | .000  | .250       | .625                     | .000  | .625       | .625       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:15 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 0    | 1    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 4        | 0    | 4    |
| +30 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 1        | 0    | 1    |
| +45 mins.    | 0        | 2    | 2    | 1        | 0    | 1    | 4        | 0    | 4    |
| Total Volume | 0        | 4    | 4    | 1        | 0    | 1    | 10       | 0    | 10   |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 100      | 0    |      |
| PHF          | .000     | .500 | .500 | .250     | .000 | .250 | .625     | .000 | .625 |

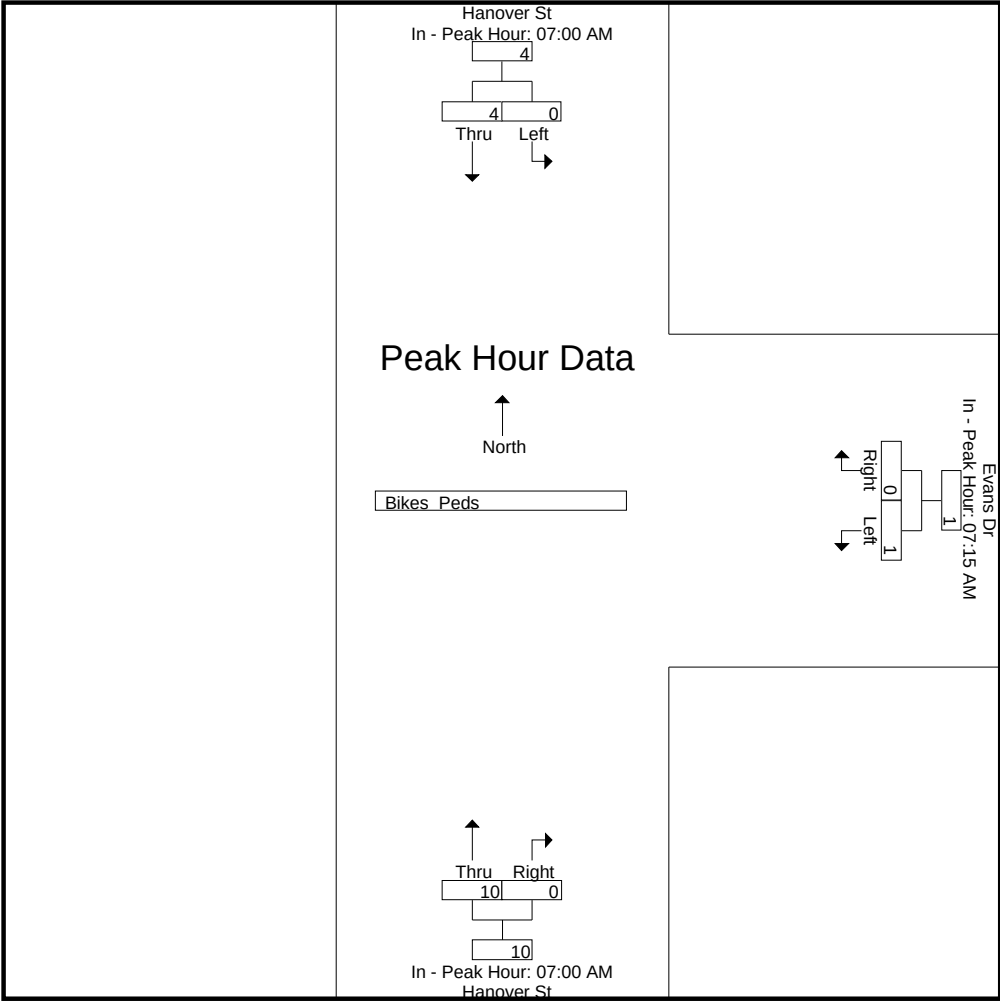


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 46                       | 1    | 0                     | 22    | 1                        | 1     | 71         |
| 02:15 PM    | 26                       | 0    | 0                     | 20    | 0                        | 2     | 48         |
| 02:30 PM    | 30                       | 0    | 0                     | 22    | 0                        | 0     | 52         |
| 02:45 PM    | 30                       | 0    | 0                     | 23    | 0                        | 0     | 53         |
| Total       | 132                      | 1    | 0                     | 87    | 1                        | 3     | 224        |
| 03:00 PM    | 25                       | 0    | 0                     | 26    | 0                        | 0     | 51         |
| 03:15 PM    | 25                       | 0    | 0                     | 10    | 0                        | 0     | 35         |
| 03:30 PM    | 13                       | 0    | 0                     | 9     | 0                        | 1     | 23         |
| 03:45 PM    | 18                       | 0    | 0                     | 11    | 0                        | 0     | 29         |
| Total       | 81                       | 0    | 0                     | 56    | 0                        | 1     | 138        |
| 04:00 PM    | 18                       | 1    | 1                     | 10    | 0                        | 1     | 31         |
| 04:15 PM    | 18                       | 0    | 1                     | 5     | 0                        | 0     | 24         |
| 04:30 PM    | 13                       | 1    | 1                     | 12    | 1                        | 2     | 30         |
| 04:45 PM    | 11                       | 0    | 0                     | 18    | 0                        | 0     | 29         |
| Total       | 60                       | 2    | 3                     | 45    | 1                        | 3     | 114        |
| 05:00 PM    | 25                       | 1    | 0                     | 15    | 0                        | 1     | 42         |
| 05:15 PM    | 23                       | 2    | 0                     | 12    | 2                        | 0     | 39         |
| 05:30 PM    | 11                       | 0    | 0                     | 7     | 0                        | 0     | 18         |
| 05:45 PM    | 9                        | 0    | 0                     | 9     | 0                        | 0     | 18         |
| Total       | 68                       | 3    | 0                     | 43    | 2                        | 1     | 117        |
| Grand Total | 341                      | 6    | 3                     | 231   | 4                        | 8     | 593        |
| Apprch %    | 98.3                     | 1.7  | 1.3                   | 98.7  | 33.3                     | 66.7  |            |
| Total %     | 57.5                     | 1    | 0.5                   | 39    | 0.7                      | 1.3   |            |
| Cars        | 341                      | 6    | 3                     | 227   | 4                        | 8     | 589        |
| % Cars      | 100                      | 100  | 100                   | 98.3  | 100                      | 100   | 99.3       |
| Trucks      | 0                        | 0    | 0                     | 4     | 0                        | 0     | 4          |
| % Trucks    | 0                        | 0    | 0                     | 1.7   | 0                        | 0     | 0.7        |

|                                                            | Hanover St<br>From North |          |            | Evans Dr<br>From East |           |            | Hanover St<br>From South |          |            |            |
|------------------------------------------------------------|--------------------------|----------|------------|-----------------------|-----------|------------|--------------------------|----------|------------|------------|
| Start Time                                                 | Left                     | Thru     | App. Total | Left                  | Right     | App. Total | Thru                     | Right    | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |          |            |                       |           |            |                          |          |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                          |          |            |                       |           |            |                          |          |            |            |
| 02:00 PM                                                   | <b>46</b>                | <b>1</b> | <b>47</b>  | 0                     | 22        | 22         | <b>1</b>                 | <b>1</b> | <b>2</b>   | <b>71</b>  |
| 02:15 PM                                                   | 26                       | 0        | 26         | 0                     | 20        | 20         | 0                        | <b>2</b> | 2          | 48         |
| 02:30 PM                                                   | 30                       | 0        | 30         | 0                     | 22        | 22         | 0                        | 0        | 0          | 52         |
| 02:45 PM                                                   | 30                       | 0        | 30         | 0                     | <b>23</b> | <b>23</b>  | 0                        | 0        | 0          | 53         |
| Total Volume                                               | 132                      | 1        | 133        | 0                     | 87        | 87         | 1                        | 3        | 4          | 224        |
| % App. Total                                               | 99.2                     | 0.8      |            | 0                     | 100       |            | 25                       | 75       |            |            |
| PHF                                                        | .717                     | .250     | .707       | .000                  | .946      | .946       | .250                     | .375     | .500       | .789       |
| Cars                                                       | 132                      | 1        | 133        | 0                     | 86        | 86         | 1                        | 3        | 4          | 223        |
| % Cars                                                     | 100                      | 100      | 100        | 0                     | 98.9      | 98.9       | 100                      | 100      | 100        | 99.6       |
| Trucks                                                     | 0                        | 0        | 0          | 0                     | 1         | 1          | 0                        | 0        | 0          | 1          |
| % Trucks                                                   | 0                        | 0        | 0          | 0                     | 1.1       | 1.1        | 0                        | 0        | 0          | 0.4        |

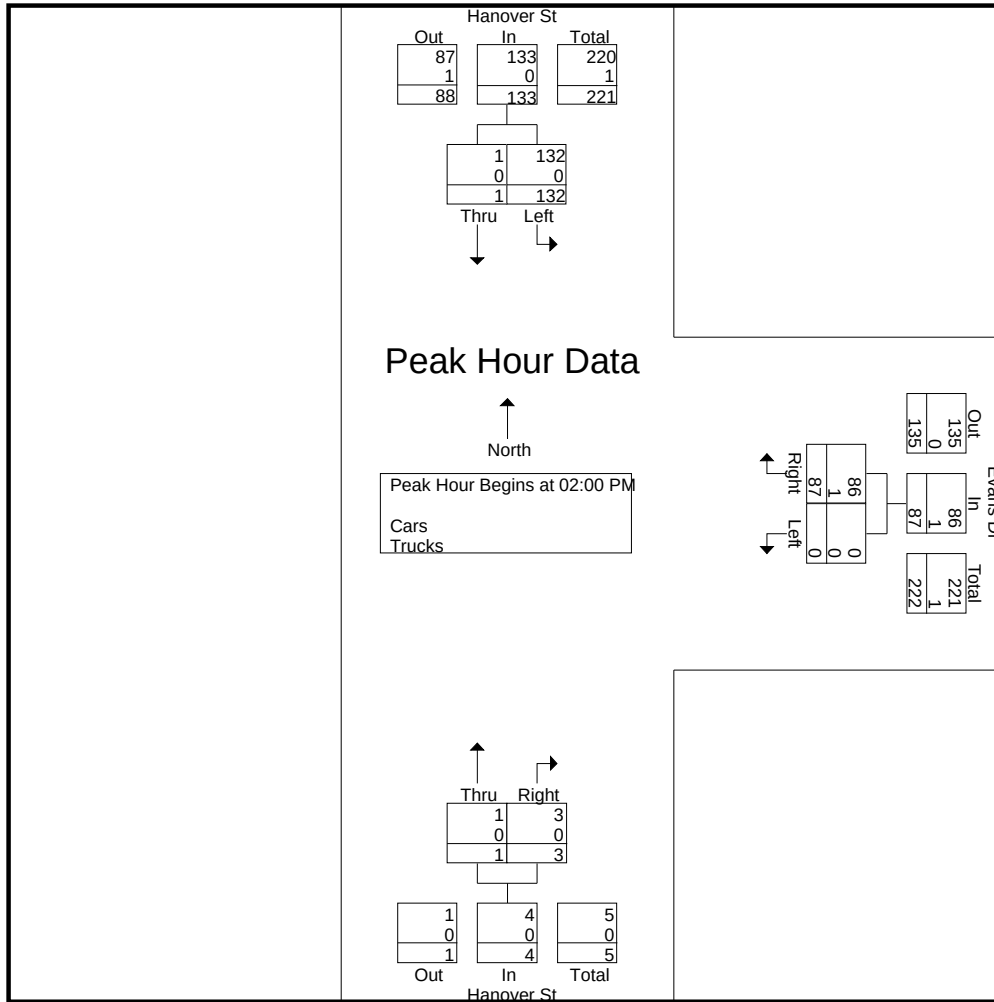


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 2



Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

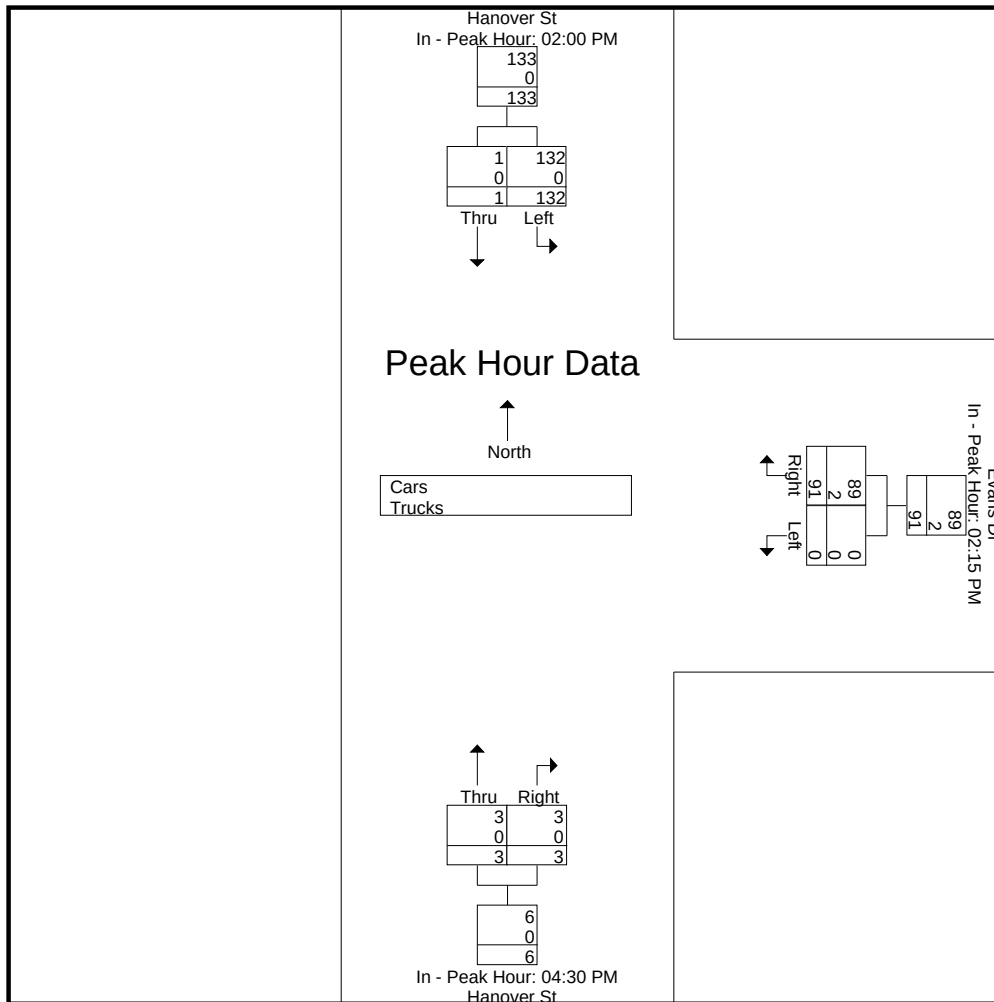
|              | 02:00 PM  |          |           | 02:15 PM |           |           | 04:30 PM |          |          |
|--------------|-----------|----------|-----------|----------|-----------|-----------|----------|----------|----------|
| +0 mins.     | <b>46</b> | <b>1</b> | <b>47</b> | 0        | 20        | 20        | 1        | <b>2</b> | <b>3</b> |
| +15 mins.    | 26        | 0        | 26        | 0        | 22        | 22        | 0        | 0        | 0        |
| +30 mins.    | 30        | 0        | 30        | 0        | 23        | 23        | 0        | 1        | 1        |
| +45 mins.    | 30        | 0        | 30        | 0        | <b>26</b> | <b>26</b> | <b>2</b> | 0        | 2        |
| Total Volume | 132       | 1        | 133       | 0        | 91        | 91        | 3        | 3        | 6        |
| % App. Total | 99.2      | 0.8      |           | 0        | 100       |           | 50       | 50       |          |
| PHF          | .717      | .250     | .707      | .000     | .875      | .875      | .375     | .375     | .500     |
| Cars         | 132       | 1        | 133       | 0        | 89        | 89        | 3        | 3        | 6        |
| % Cars       | 100       | 100      | 100       | 0        | 97.8      | 97.8      | 100      | 100      | 100      |
| Trucks       | 0         | 0        | 0         | 0        | 2         | 2         | 0        | 0        | 0        |
| % Trucks     | 0         | 0        | 0         | 0        | 2.2       | 2.2       | 0        | 0        | 0        |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 46                       | 1    | 0                     | 22    | 1                        | 1     | 71         |
| 02:15 PM    | 26                       | 0    | 0                     | 19    | 0                        | 2     | 47         |
| 02:30 PM    | 30                       | 0    | 0                     | 22    | 0                        | 0     | 52         |
| 02:45 PM    | 30                       | 0    | 0                     | 23    | 0                        | 0     | 53         |
| Total       | 132                      | 1    | 0                     | 86    | 1                        | 3     | 223        |
| 03:00 PM    | 25                       | 0    | 0                     | 25    | 0                        | 0     | 50         |
| 03:15 PM    | 25                       | 0    | 0                     | 10    | 0                        | 0     | 35         |
| 03:30 PM    | 13                       | 0    | 0                     | 9     | 0                        | 1     | 23         |
| 03:45 PM    | 18                       | 0    | 0                     | 10    | 0                        | 0     | 28         |
| Total       | 81                       | 0    | 0                     | 54    | 0                        | 1     | 136        |
| 04:00 PM    | 18                       | 1    | 1                     | 10    | 0                        | 1     | 31         |
| 04:15 PM    | 18                       | 0    | 1                     | 5     | 0                        | 0     | 24         |
| 04:30 PM    | 13                       | 1    | 1                     | 11    | 1                        | 2     | 29         |
| 04:45 PM    | 11                       | 0    | 0                     | 18    | 0                        | 0     | 29         |
| Total       | 60                       | 2    | 3                     | 44    | 1                        | 3     | 113        |
| 05:00 PM    | 25                       | 1    | 0                     | 15    | 0                        | 1     | 42         |
| 05:15 PM    | 23                       | 2    | 0                     | 12    | 2                        | 0     | 39         |
| 05:30 PM    | 11                       | 0    | 0                     | 7     | 0                        | 0     | 18         |
| 05:45 PM    | 9                        | 0    | 0                     | 9     | 0                        | 0     | 18         |
| Total       | 68                       | 3    | 0                     | 43    | 2                        | 1     | 117        |
| Grand Total | 341                      | 6    | 3                     | 227   | 4                        | 8     | 589        |
| Apprch %    | 98.3                     | 1.7  | 1.3                   | 98.7  | 33.3                     | 66.7  |            |
| Total %     | 57.9                     | 1    | 0.5                   | 38.5  | 0.7                      | 1.4   |            |

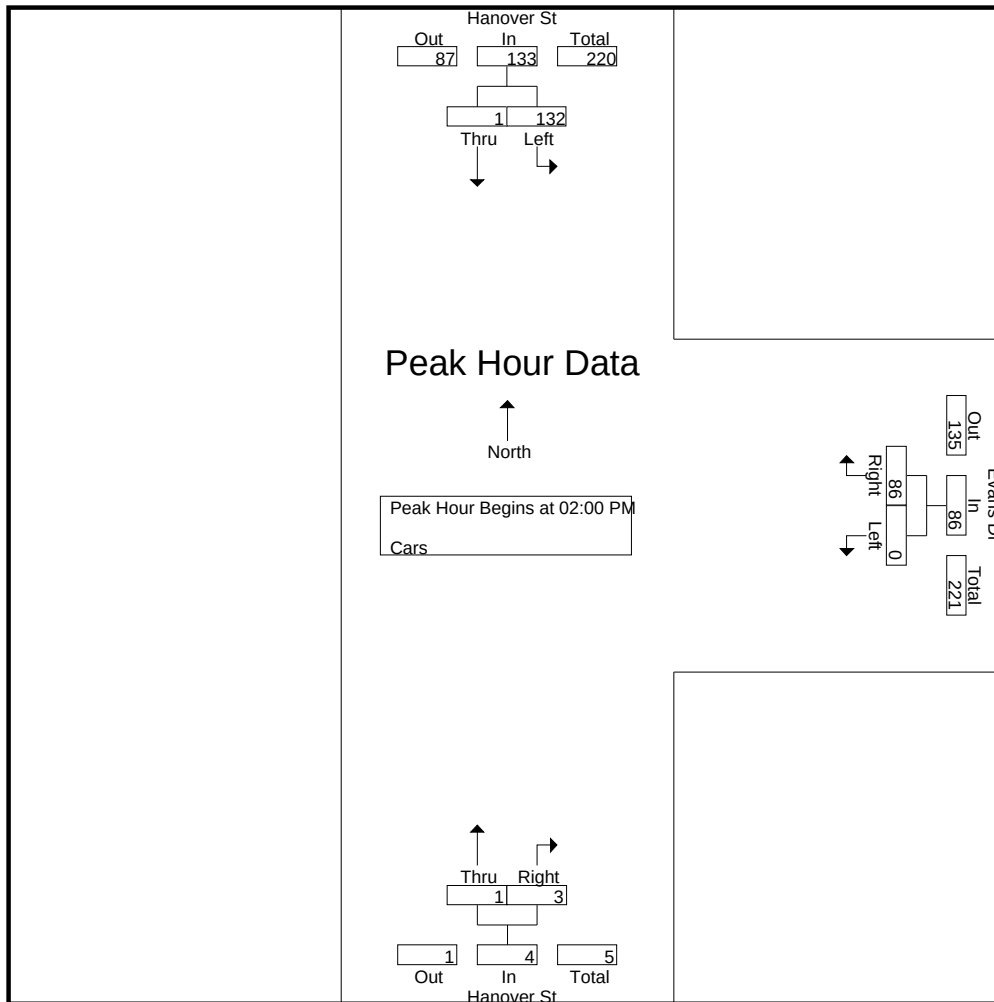
|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                          |      |            |                       |       |            |                          |       |            |            |
| 02:00 PM                                                   | 46                       | 1    | 47         | 0                     | 22    | 22         | 1                        | 1     | 2          | 71         |
| 02:15 PM                                                   | 26                       | 0    | 26         | 0                     | 19    | 19         | 0                        | 2     | 2          | 47         |
| 02:30 PM                                                   | 30                       | 0    | 30         | 0                     | 22    | 22         | 0                        | 0     | 0          | 52         |
| 02:45 PM                                                   | 30                       | 0    | 30         | 0                     | 23    | 23         | 0                        | 0     | 0          | 53         |
| Total Volume                                               | 132                      | 1    | 133        | 0                     | 86    | 86         | 1                        | 3     | 4          | 223        |
| % App. Total                                               | 99.2                     | 0.8  |            | 0                     | 100   |            | 25                       | 75    |            |            |
| PHF                                                        | .717                     | .250 | .707       | .000                  | .935  | .935       | .250                     | .375  | .500       | .785       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 5



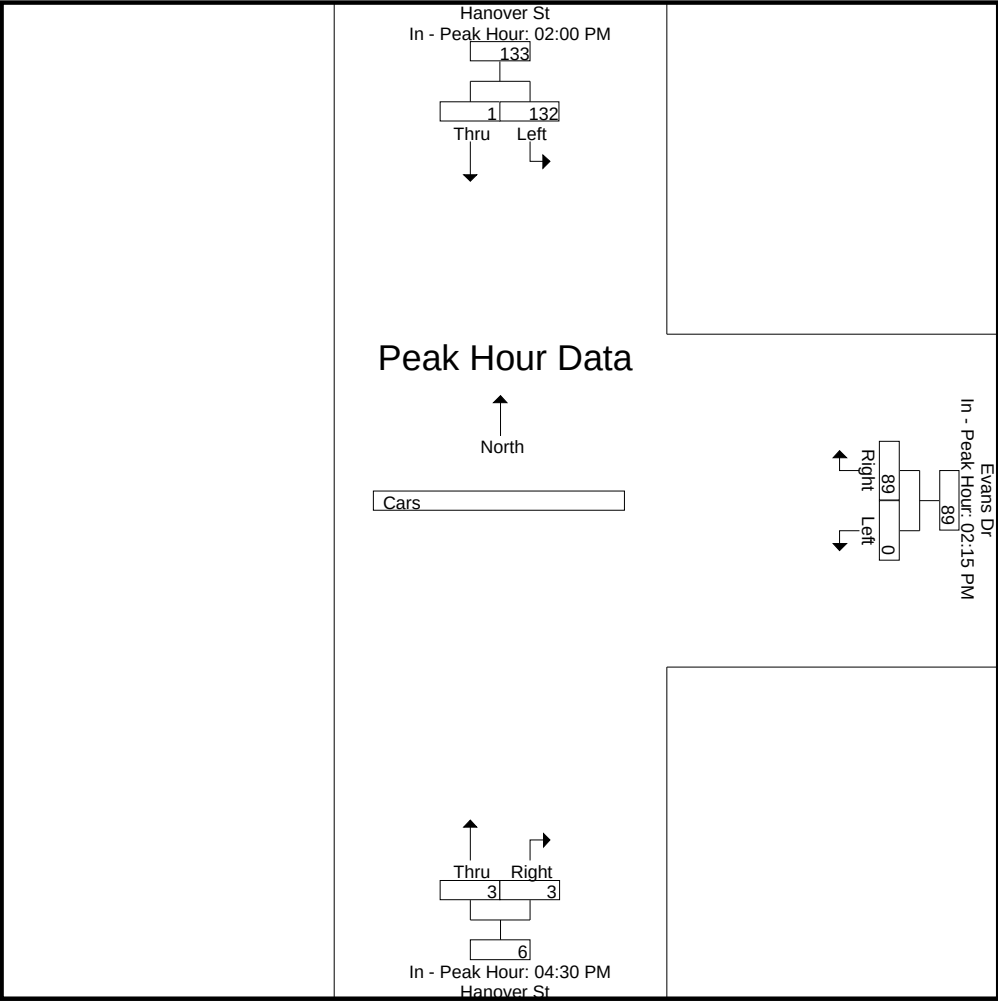
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:15 PM |      |      | 04:30 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 46       | 1    | 47   | 0        | 19   | 19   | 1        | 2    | 3    |
| +15 mins.    | 26       | 0    | 26   | 0        | 22   | 22   | 0        | 0    | 0    |
| +30 mins.    | 30       | 0    | 30   | 0        | 23   | 23   | 0        | 1    | 1    |
| +45 mins.    | 30       | 0    | 30   | 0        | 25   | 25   | 2        | 0    | 2    |
| Total Volume | 132      | 1    | 133  | 0        | 89   | 89   | 3        | 3    | 6    |
| % App. Total | 99.2     | 0.8  |      | 0        | 100  |      | 50       | 50   |      |
| PHF          | .717     | .250 | .707 | .000     | .890 | .890 | .375     | .375 | .500 |



N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Hanover St<br>From North |      | Evans Dr<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|-----------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                  | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 02:15 PM    | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 02:30 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 02:45 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 03:00 PM    | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 03:15 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 03:30 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 03:45 PM    | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| Total       | 0                        | 0    | 0                     | 2     | 0                        | 0     | 2          |
| 04:00 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 04:15 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 04:30 PM    | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 04:45 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                     | 1     | 0                        | 0     | 1          |
| 05:00 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 05:15 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 05:30 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| 05:45 PM    | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                     | 0     | 0                        | 0     | 0          |
| Grand Total | 0                        | 0    | 0                     | 4     | 0                        | 0     | 4          |
| Apprch %    | 0                        | 0    | 0                     | 100   | 0                        | 0     |            |
| Total %     | 0                        | 0    | 0                     | 100   | 0                        | 0     |            |

|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                          |      |            |                       |       |            |                          |       |            |            |
| 02:15 PM                                                   | 0                        | 0    | 0          | 0                     | 1     | 1          | 0                        | 0     | 0          | 1          |
| 02:30 PM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 0     | 0          | 0          |
| 02:45 PM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 0     | 0          | 0          |
| 03:00 PM                                                   | 0                        | 0    | 0          | 0                     | 1     | 1          | 0                        | 0     | 0          | 1          |
| Total Volume                                               | 0                        | 0    | 0          | 0                     | 2     | 2          | 0                        | 0     | 0          | 2          |
| % App. Total                                               | 0                        | 0    |            | 0                     | 100   |            | 0                        | 0     |            |            |
| PHF                                                        | .000                     | .000 | .000       | .000                  | .500  | .500       | .000                     | .000  | .000       | .500       |

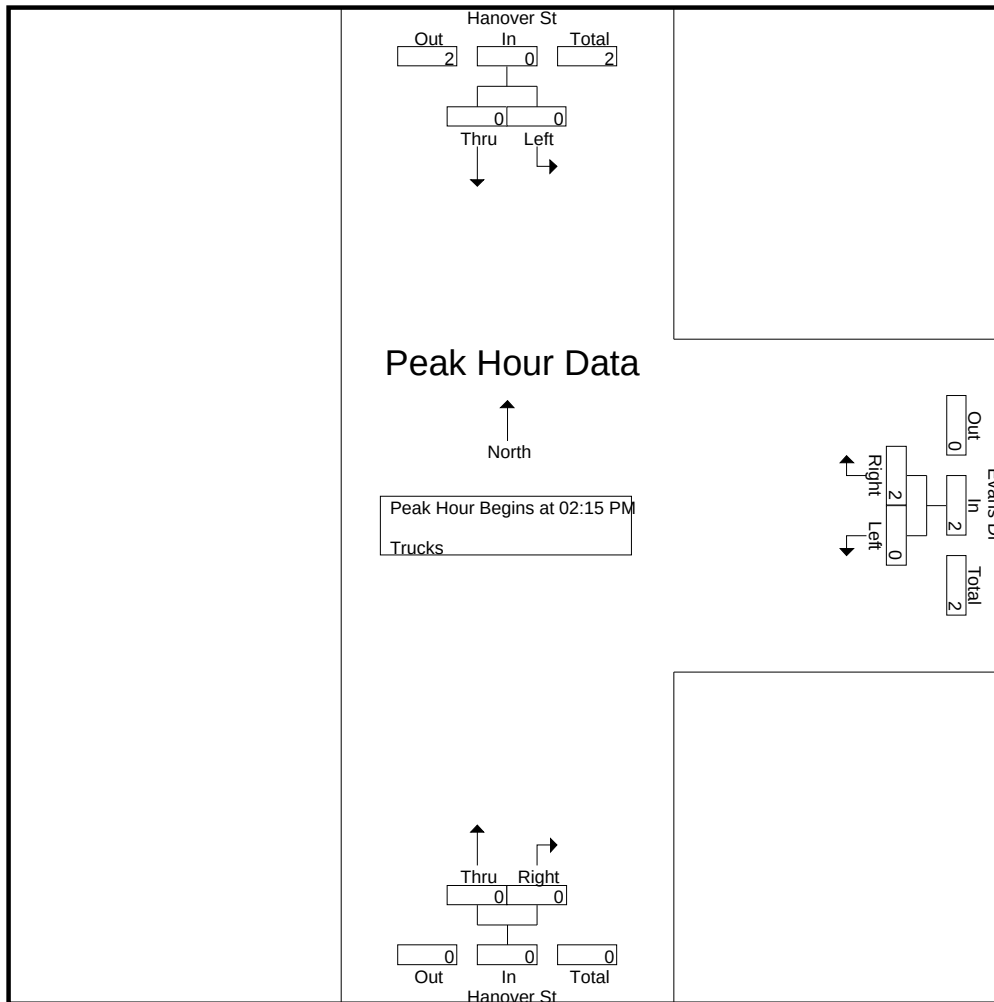


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 8

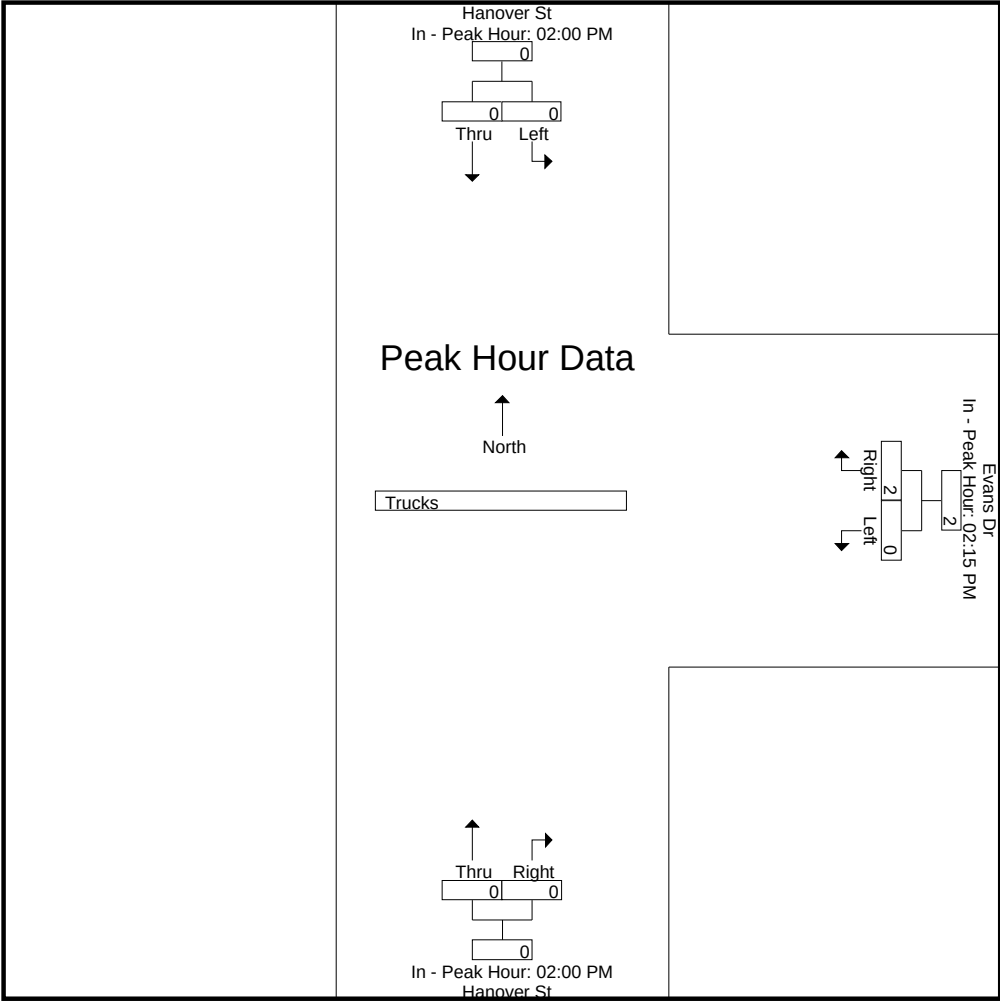


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:15 PM |      |      | 02:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 1    | 1    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 1    | 1    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 2    | 2    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 100  |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .500 | .500 | .000     | .000 | .000 |

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Evans Dr<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|-----------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                  | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 02:00 PM    | 0                        | 1    | 0    | 0                     | 0     | 17   | 0                        | 0     | 0    | 17           | 1            | 18         |
| 02:15 PM    | 0                        | 5    | 0    | 0                     | 0     | 13   | 0                        | 0     | 0    | 13           | 5            | 18         |
| 02:30 PM    | 0                        | 3    | 0    | 0                     | 0     | 16   | 0                        | 0     | 0    | 16           | 3            | 19         |
| 02:45 PM    | 0                        | 2    | 0    | 0                     | 0     | 31   | 0                        | 0     | 0    | 31           | 2            | 33         |
| Total       | 0                        | 11   | 0    | 0                     | 0     | 77   | 0                        | 0     | 0    | 77           | 11           | 88         |
| 03:00 PM    | 0                        | 5    | 0    | 0                     | 0     | 39   | 0                        | 0     | 0    | 39           | 5            | 44         |
| 03:15 PM    | 0                        | 0    | 0    | 0                     | 0     | 6    | 0                        | 0     | 0    | 6            | 0            | 6          |
| 03:30 PM    | 0                        | 0    | 0    | 0                     | 0     | 4    | 1                        | 0     | 0    | 4            | 1            | 5          |
| 03:45 PM    | 0                        | 1    | 0    | 0                     | 0     | 3    | 0                        | 0     | 0    | 3            | 1            | 4          |
| Total       | 0                        | 6    | 0    | 0                     | 0     | 52   | 1                        | 0     | 0    | 52           | 7            | 59         |
| 04:00 PM    | 0                        | 1    | 0    | 0                     | 0     | 8    | 1                        | 0     | 0    | 8            | 2            | 10         |
| 04:15 PM    | 0                        | 0    | 0    | 0                     | 0     | 2    | 0                        | 0     | 1    | 3            | 0            | 3          |
| 04:30 PM    | 0                        | 0    | 0    | 0                     | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 04:45 PM    | 0                        | 0    | 0    | 0                     | 0     | 1    | 0                        | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                        | 1    | 0    | 0                     | 0     | 11   | 1                        | 0     | 1    | 12           | 2            | 14         |
| 05:00 PM    | 0                        | 0    | 0    | 0                     | 0     | 1    | 0                        | 0     | 0    | 1            | 0            | 1          |
| 05:15 PM    | 0                        | 0    | 0    | 0                     | 0     | 1    | 0                        | 0     | 0    | 1            | 0            | 1          |
| 05:30 PM    | 0                        | 2    | 0    | 0                     | 0     | 1    | 0                        | 0     | 0    | 1            | 2            | 3          |
| 05:45 PM    | 0                        | 1    | 0    | 0                     | 0     | 0    | 0                        | 0     | 0    | 0            | 1            | 1          |
| Total       | 0                        | 3    | 0    | 0                     | 0     | 3    | 0                        | 0     | 0    | 3            | 3            | 6          |
| Grand Total | 0                        | 21   | 0    | 0                     | 0     | 143  | 2                        | 0     | 1    | 144          | 23           | 167        |
| Apprch %    | 0                        | 100  |      | 0                     | 0     |      | 100                      | 0     |      |              |              |            |
| Total %     | 0                        | 91.3 |      | 0                     | 0     |      | 8.7                      | 0     |      | 86.2         | 13.8         |            |

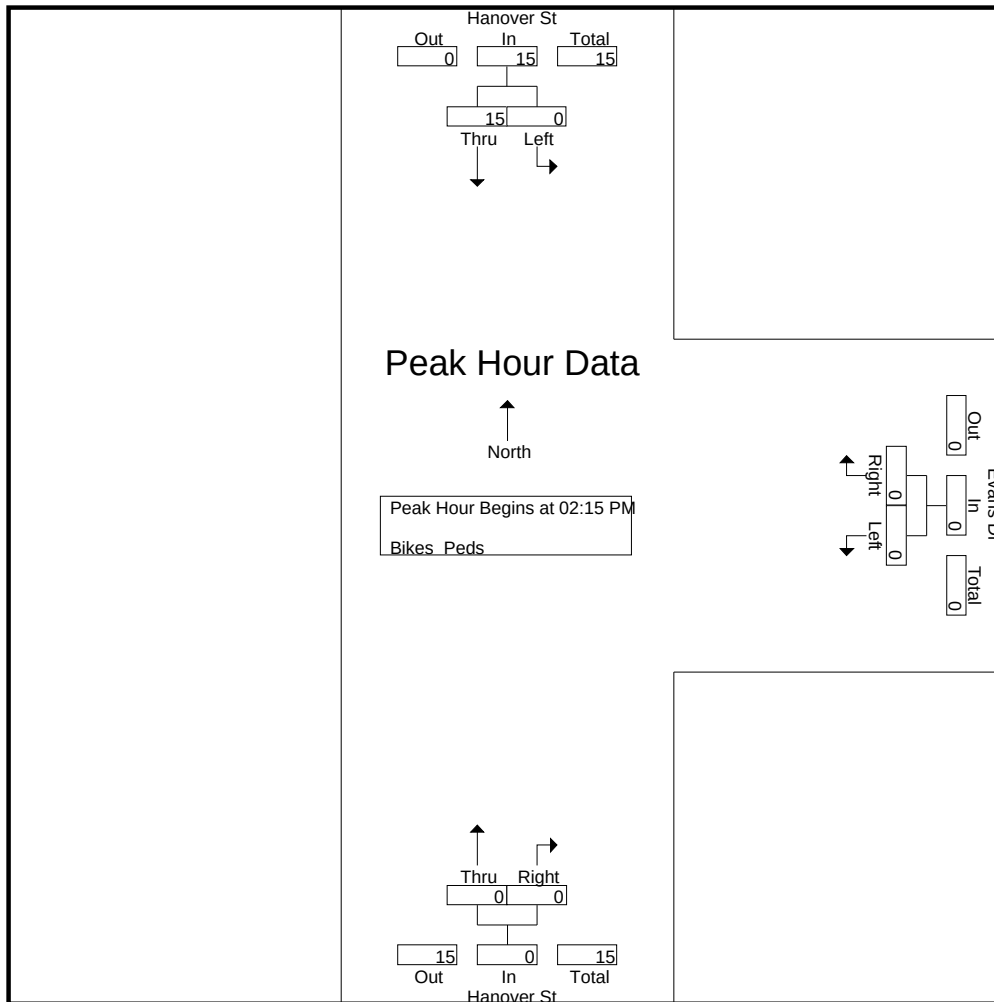
|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                          |      |            |                       |       |            |                          |       |            |            |
| 02:15 PM                                                   | 0                        | 5    | 5          | 0                     | 0     | 0          | 0                        | 0     | 0          | 5          |
| 02:30 PM                                                   | 0                        | 3    | 3          | 0                     | 0     | 0          | 0                        | 0     | 0          | 3          |
| 02:45 PM                                                   | 0                        | 2    | 2          | 0                     | 0     | 0          | 0                        | 0     | 0          | 2          |
| 03:00 PM                                                   | 0                        | 5    | 5          | 0                     | 0     | 0          | 0                        | 0     | 0          | 5          |
| Total Volume                                               | 0                        | 15   | 15         | 0                     | 0     | 0          | 0                        | 0     | 0          | 15         |
| % App. Total                                               | 0                        | 100  |            | 0                     | 0     |            | 0                        | 0     |            |            |
| PHF                                                        | .000                     | .750 | .750       | .000                  | .000  | .000       | .000                     | .000  | .000       | .750       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933001  
 Site Code : 52933001  
 Start Date : 11/10/2022  
 Page No : 11



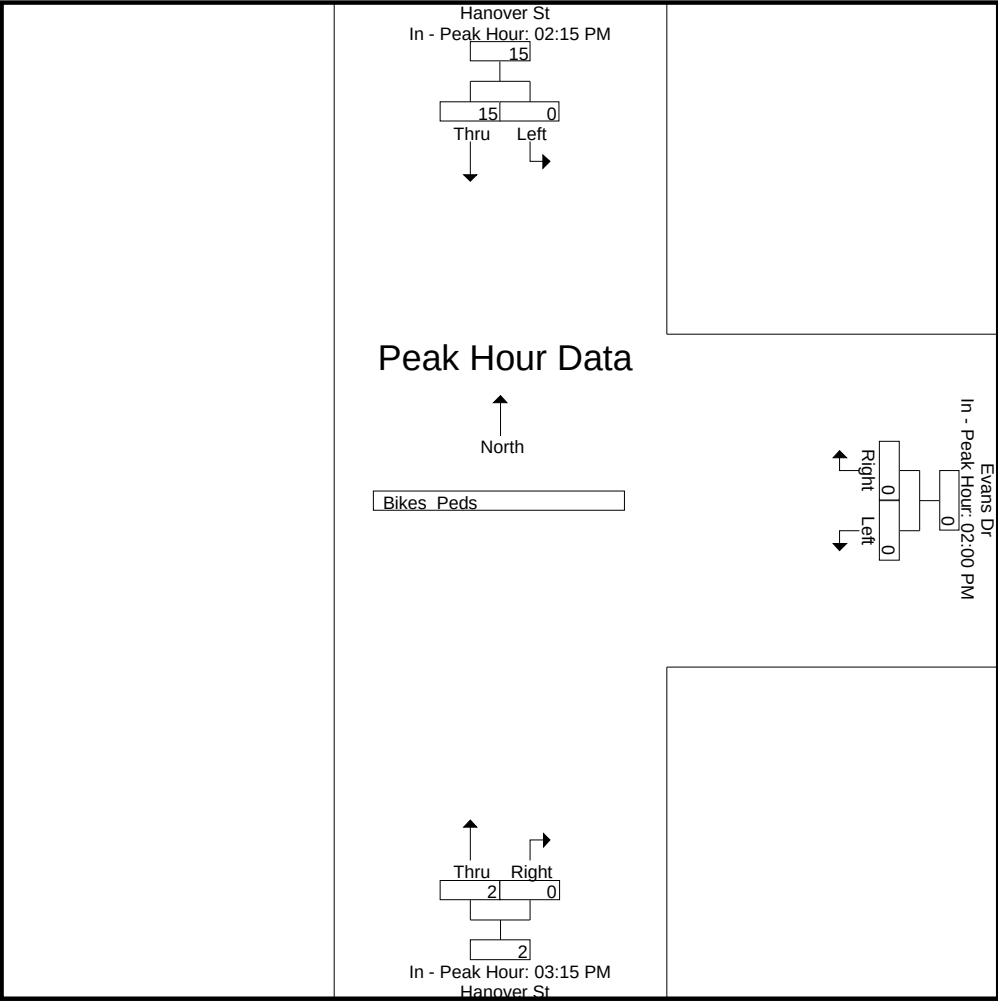
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 02:15 PM |      |      | 02:00 PM |      |      | 03:15 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 5    | 5    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 3    | 3    | 0        | 0    | 0    | 1        | 0    | 1    |
| +30 mins.    | 0        | 2    | 2    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 5    | 5    | 0        | 0    | 0    | 1        | 0    | 1    |
| Total Volume | 0        | 15   | 15   | 0        | 0    | 0    | 2        | 0    | 2    |
| % App. Total | 0        | 100  |      | 0        | 0    |      | 100      | 0    |      |
| PHF          | .000     | .750 | .750 | .000     | .000 | .000 | .500     | .000 | .500 |



N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933001  
Site Code : 52933001  
Start Date : 11/10/2022  
Page No : 12



**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 1

**Groups Printed- Cars - Trucks**

|             | <b>Hanover St<br/>From North</b> |      | <b>Evans Dr<br/>From East</b> |       | <b>Hanover St<br/>From South</b> |       |            |
|-------------|----------------------------------|------|-------------------------------|-------|----------------------------------|-------|------------|
| Start Time  | Left                             | Thru | Left                          | Right | Thru                             | Right | Int. Total |
| 11:00 AM    | 2                                | 0    | 1                             | 4     | 0                                | 0     | 7          |
| 11:15 AM    | 3                                | 1    | 0                             | 9     | 0                                | 1     | 14         |
| 11:30 AM    | 3                                | 0    | 0                             | 4     | 0                                | 0     | 7          |
| 11:45 AM    | 7                                | 0    | 0                             | 6     | 0                                | 0     | 13         |
| Total       | 15                               | 1    | 1                             | 23    | 0                                | 1     | 41         |
| 12:00 PM    | 4                                | 0    | 0                             | 5     | 0                                | 0     | 9          |
| 12:15 PM    | 4                                | 0    | 0                             | 4     | 0                                | 0     | 8          |
| 12:30 PM    | 2                                | 0    | 0                             | 7     | 0                                | 0     | 9          |
| 12:45 PM    | 2                                | 1    | 0                             | 2     | 1                                | 0     | 6          |
| Total       | 12                               | 1    | 0                             | 18    | 1                                | 0     | 32         |
| Grand Total | 27                               | 2    | 1                             | 41    | 1                                | 1     | 73         |
| Apprch %    | 93.1                             | 6.9  | 2.4                           | 97.6  | 50                               | 50    |            |
| Total %     | 37                               | 2.7  | 1.4                           | 56.2  | 1.4                              | 1.4   |            |
| Cars        | 27                               | 2    | 1                             | 41    | 1                                | 1     | 73         |
| % Cars      | 100                              | 100  | 100                           | 100   | 100                              | 100   | 100        |
| Trucks      | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| % Trucks    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |

|                                                            | <b>Hanover St<br/>From North</b> |      |            | <b>Evans Dr<br/>From East</b> |       |            | <b>Hanover St<br/>From South</b> |       |            |            |
|------------------------------------------------------------|----------------------------------|------|------------|-------------------------------|-------|------------|----------------------------------|-------|------------|------------|
| Start Time                                                 | Left                             | Thru | App. Total | Left                          | Right | App. Total | Thru                             | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                  |      |            |                               |       |            |                                  |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                                  |      |            |                               |       |            |                                  |       |            |            |
| 11:15 AM                                                   | 3                                | 1    | 4          | 0                             | 9     | 9          | 0                                | 1     | 1          | 14         |
| 11:30 AM                                                   | 3                                | 0    | 3          | 0                             | 4     | 4          | 0                                | 0     | 0          | 7          |
| 11:45 AM                                                   | 7                                | 0    | 7          | 0                             | 6     | 6          | 0                                | 0     | 0          | 13         |
| 12:00 PM                                                   | 4                                | 0    | 4          | 0                             | 5     | 5          | 0                                | 0     | 0          | 9          |
| Total Volume                                               | 17                               | 1    | 18         | 0                             | 24    | 24         | 0                                | 1     | 1          | 43         |
| % App. Total                                               | 94.4                             | 5.6  |            | 0                             | 100   |            | 0                                | 100   |            |            |
| PHF                                                        | .607                             | .250 | .643       | .000                          | .667  | .667       | .000                             | .250  | .250       | .768       |
| Cars                                                       | 17                               | 1    | 18         | 0                             | 24    | 24         | 0                                | 1     | 1          | 43         |
| % Cars                                                     | 100                              | 100  | 100        | 0                             | 100   | 100        | 0                                | 100   | 100        | 100        |
| Trucks                                                     | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| % Trucks                                                   | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |

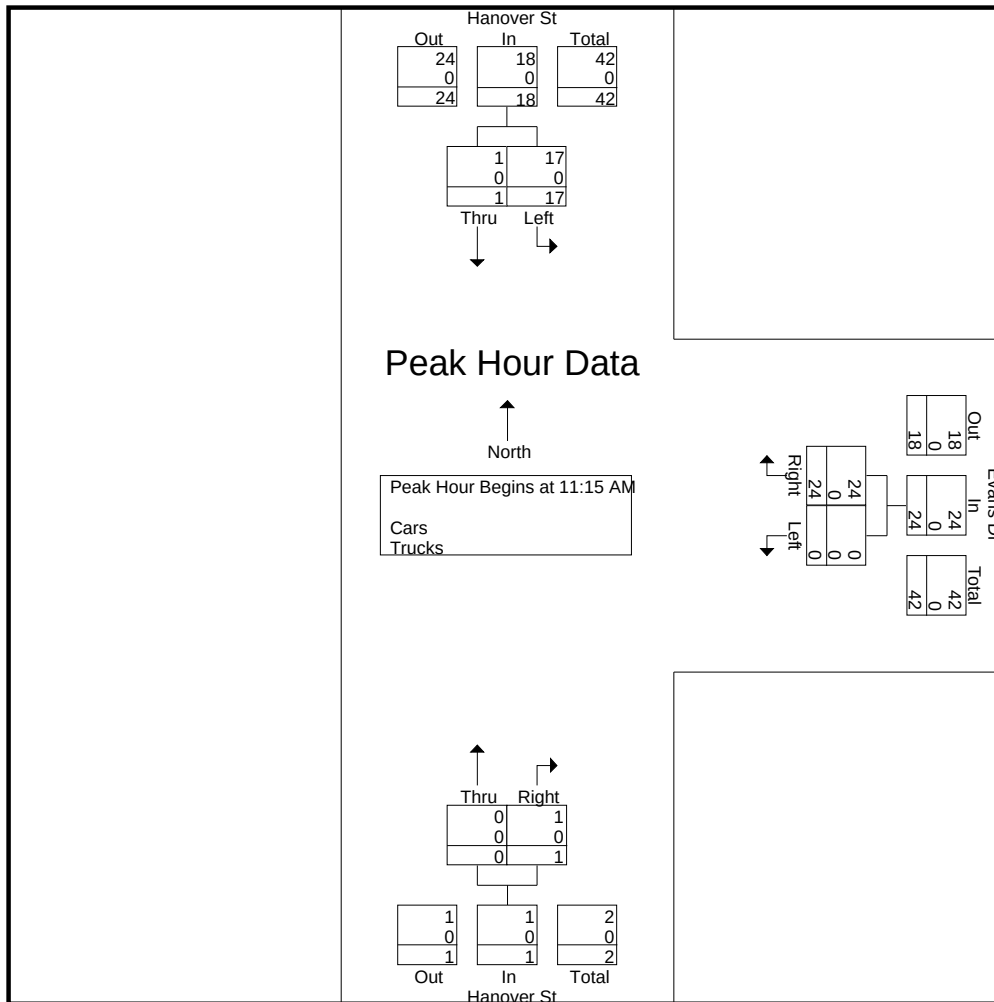


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S1  
 Site Code : 52933001  
 Start Date : 11/12/2022  
 Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

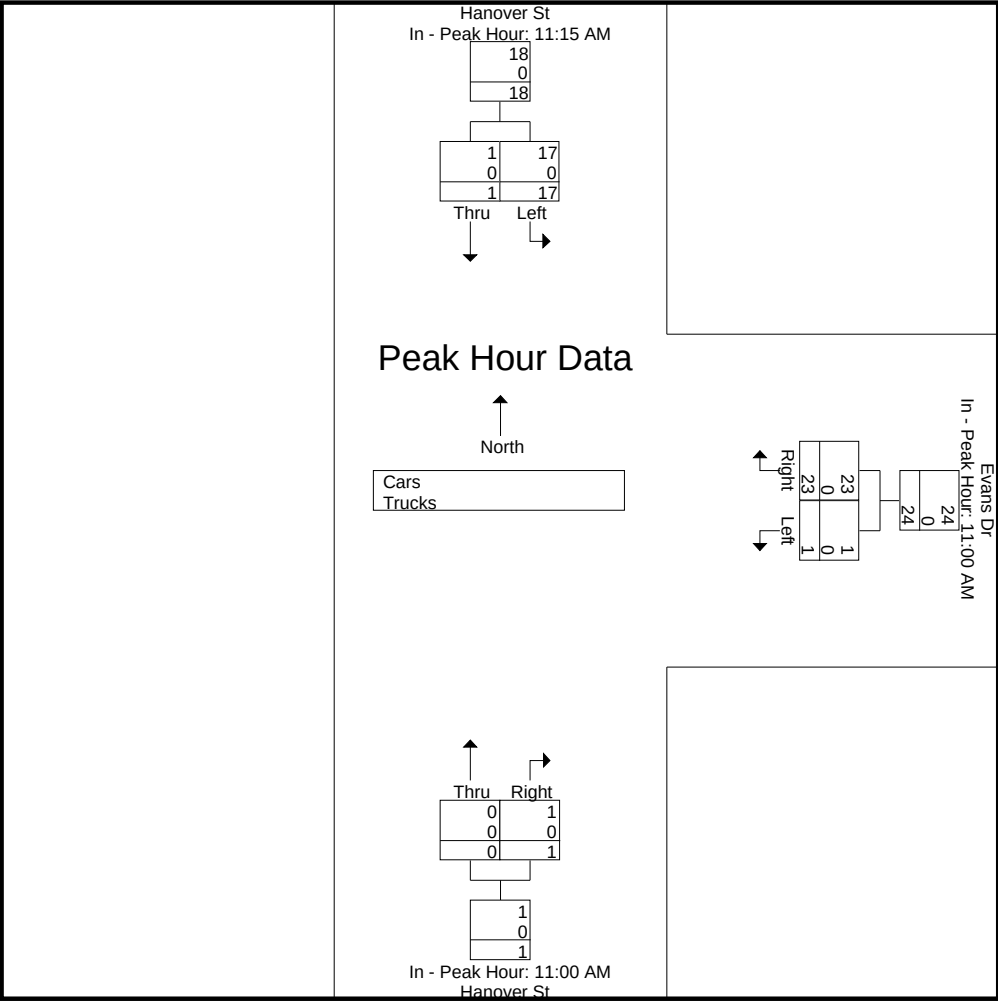
|              | 11:15 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 3        | 1    | 4    | 1        | 4    | 5    | 0        | 0    | 0    |
| +15 mins.    | 3        | 0    | 3    | 0        | 9    | 9    | 0        | 1    | 1    |
| +30 mins.    | 7        | 0    | 7    | 0        | 4    | 4    | 0        | 0    | 0    |
| +45 mins.    | 4        | 0    | 4    | 0        | 6    | 6    | 0        | 0    | 0    |
| Total Volume | 17       | 1    | 18   | 1        | 23   | 24   | 0        | 1    | 1    |
| % App. Total | 94.4     | 5.6  |      | 4.2      | 95.8 |      | 0        | 100  |      |
| PHF          | .607     | .250 | .643 | .250     | .639 | .667 | .000     | .250 | .250 |
| Cars         | 17       | 1    | 18   | 1        | 23   | 24   | 0        | 1    | 1    |
| % Cars       | 100      | 100  | 100  | 100      | 100  | 100  | 0        | 100  | 100  |
| Trucks       | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % Trucks     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S1  
 Site Code : 52933001  
 Start Date : 11/12/2022  
 Page No : 3





**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 4

**Groups Printed- Cars**

|             | <b>Hanover St<br/>From North</b> |      | <b>Evans Dr<br/>From East</b> |       | <b>Hanover St<br/>From South</b> |       |            |
|-------------|----------------------------------|------|-------------------------------|-------|----------------------------------|-------|------------|
| Start Time  | Left                             | Thru | Left                          | Right | Thru                             | Right | Int. Total |
| 11:00 AM    | 2                                | 0    | 1                             | 4     | 0                                | 0     | 7          |
| 11:15 AM    | 3                                | 1    | 0                             | 9     | 0                                | 1     | 14         |
| 11:30 AM    | 3                                | 0    | 0                             | 4     | 0                                | 0     | 7          |
| 11:45 AM    | 7                                | 0    | 0                             | 6     | 0                                | 0     | 13         |
| Total       | 15                               | 1    | 1                             | 23    | 0                                | 1     | 41         |
| 12:00 PM    | 4                                | 0    | 0                             | 5     | 0                                | 0     | 9          |
| 12:15 PM    | 4                                | 0    | 0                             | 4     | 0                                | 0     | 8          |
| 12:30 PM    | 2                                | 0    | 0                             | 7     | 0                                | 0     | 9          |
| 12:45 PM    | 2                                | 1    | 0                             | 2     | 1                                | 0     | 6          |
| Total       | 12                               | 1    | 0                             | 18    | 1                                | 0     | 32         |
| Grand Total | 27                               | 2    | 1                             | 41    | 1                                | 1     | 73         |
| Apprch %    | 93.1                             | 6.9  | 2.4                           | 97.6  | 50                               | 50    |            |
| Total %     | 37                               | 2.7  | 1.4                           | 56.2  | 1.4                              | 1.4   |            |

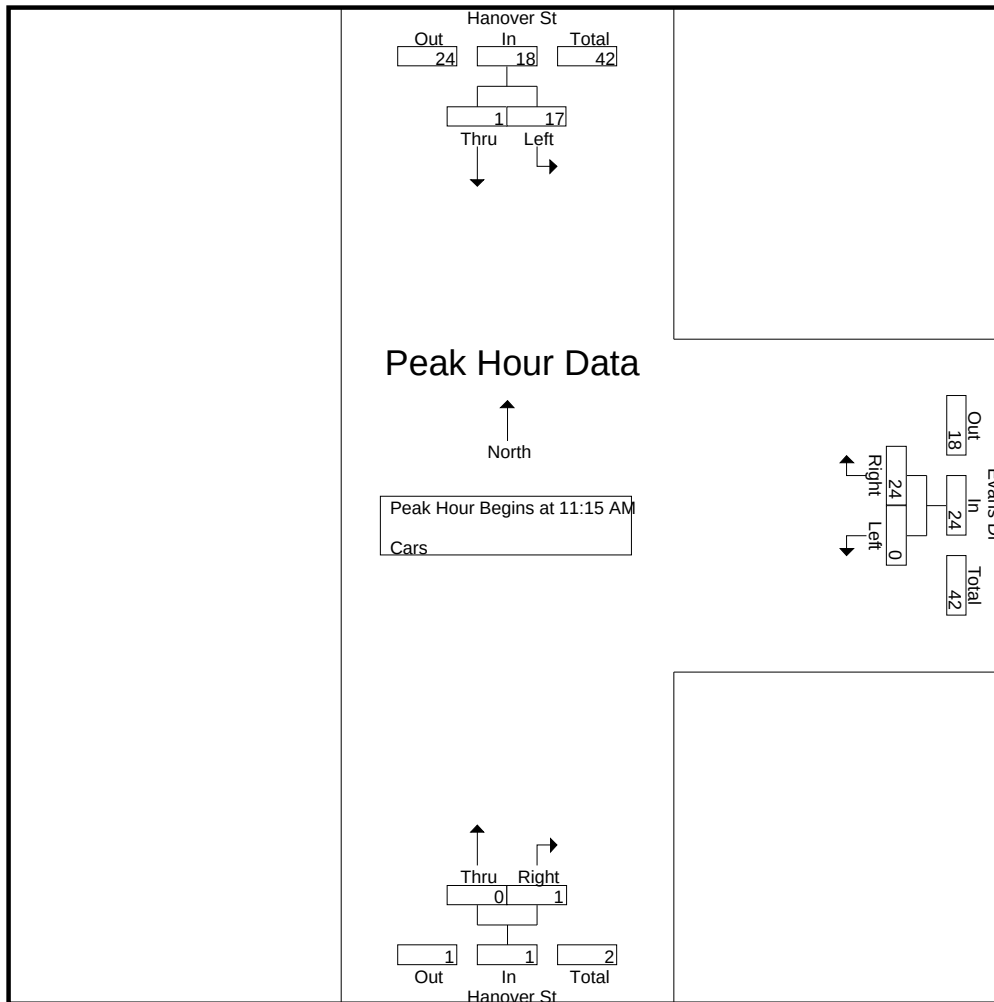
|                                                            | <b>Hanover St<br/>From North</b> |      |            | <b>Evans Dr<br/>From East</b> |       |            | <b>Hanover St<br/>From South</b> |       |            |            |
|------------------------------------------------------------|----------------------------------|------|------------|-------------------------------|-------|------------|----------------------------------|-------|------------|------------|
| Start Time                                                 | Left                             | Thru | App. Total | Left                          | Right | App. Total | Thru                             | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                  |      |            |                               |       |            |                                  |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                                  |      |            |                               |       |            |                                  |       |            |            |
| 11:15 AM                                                   | 3                                | 1    | 4          | 0                             | 9     | 9          | 0                                | 1     | 1          | 14         |
| 11:30 AM                                                   | 3                                | 0    | 3          | 0                             | 4     | 4          | 0                                | 0     | 0          | 7          |
| 11:45 AM                                                   | 7                                | 0    | 7          | 0                             | 6     | 6          | 0                                | 0     | 0          | 13         |
| 12:00 PM                                                   | 4                                | 0    | 4          | 0                             | 5     | 5          | 0                                | 0     | 0          | 9          |
| Total Volume                                               | 17                               | 1    | 18         | 0                             | 24    | 24         | 0                                | 1     | 1          | 43         |
| % App. Total                                               | 94.4                             | 5.6  |            | 0                             | 100   |            | 0                                | 100   |            |            |
| PHF                                                        | .607                             | .250 | .643       | .000                          | .667  | .667       | .000                             | .250  | .250       | .768       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S1  
 Site Code : 52933001  
 Start Date : 11/12/2022  
 Page No : 5



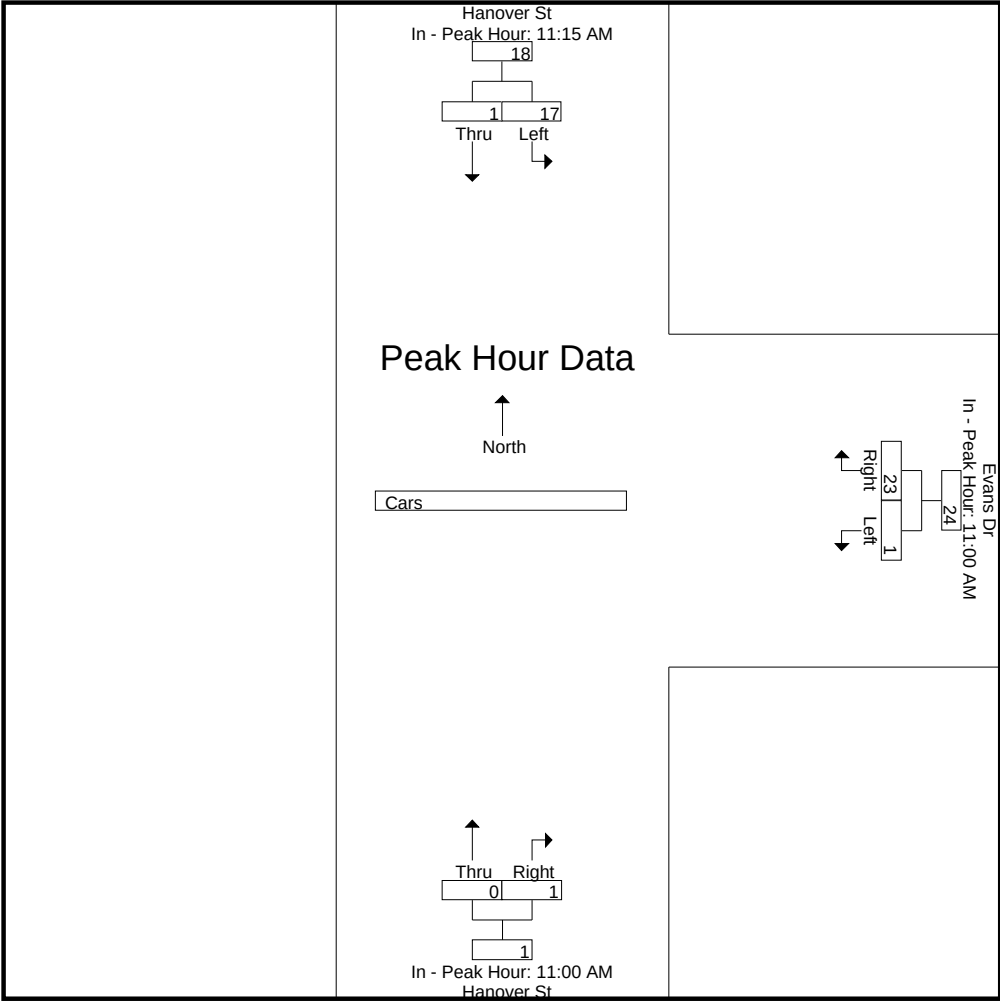
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:15 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 3        | 1    | 4    | 1        | 4    | 5    | 0        | 0    | 0    |
| +15 mins.    | 3        | 0    | 3    | 0        | 9    | 9    | 0        | 1    | 1    |
| +30 mins.    | 7        | 0    | 7    | 0        | 4    | 4    | 0        | 0    | 0    |
| +45 mins.    | 4        | 0    | 4    | 0        | 6    | 6    | 0        | 0    | 0    |
| Total Volume | 17       | 1    | 18   | 1        | 23   | 24   | 0        | 1    | 1    |
| % App. Total | 94.4     | 5.6  |      | 4.2      | 95.8 |      | 0        | 100  |      |
| PHF          | .607     | .250 | .643 | .250     | .639 | .667 | .000     | .250 | .250 |



N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 6



**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 7

**Groups Printed- Trucks**

|             | <b>Hanover St<br/>From North</b> |      | <b>Evans Dr<br/>From East</b> |       | <b>Hanover St<br/>From South</b> |       |            |
|-------------|----------------------------------|------|-------------------------------|-------|----------------------------------|-------|------------|
| Start Time  | Left                             | Thru | Left                          | Right | Thru                             | Right | Int. Total |
| 11:00 AM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 11:15 AM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 11:30 AM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 11:45 AM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| Total       | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 12:00 PM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 12:15 PM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 12:30 PM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| 12:45 PM    | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| Total       | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| Grand Total | 0                                | 0    | 0                             | 0     | 0                                | 0     | 0          |
| Apprch %    | 0                                | 0    | 0                             | 0     | 0                                | 0     |            |
| Total %     |                                  |      |                               |       |                                  |       |            |

|                                                            | <b>Hanover St<br/>From North</b> |      |            | <b>Evans Dr<br/>From East</b> |       |            | <b>Hanover St<br/>From South</b> |       |            |            |
|------------------------------------------------------------|----------------------------------|------|------------|-------------------------------|-------|------------|----------------------------------|-------|------------|------------|
| Start Time                                                 | Left                             | Thru | App. Total | Left                          | Right | App. Total | Thru                             | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                  |      |            |                               |       |            |                                  |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                                  |      |            |                               |       |            |                                  |       |            |            |
| 11:00 AM                                                   | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| Total Volume                                               | 0                                | 0    | 0          | 0                             | 0     | 0          | 0                                | 0     | 0          | 0          |
| % App. Total                                               | 0                                | 0    |            | 0                             | 0     |            | 0                                | 0     |            |            |
| PHF                                                        | .000                             | .000 | .000       | .000                          | .000  | .000       | .000                             | .000  | .000       | .000       |

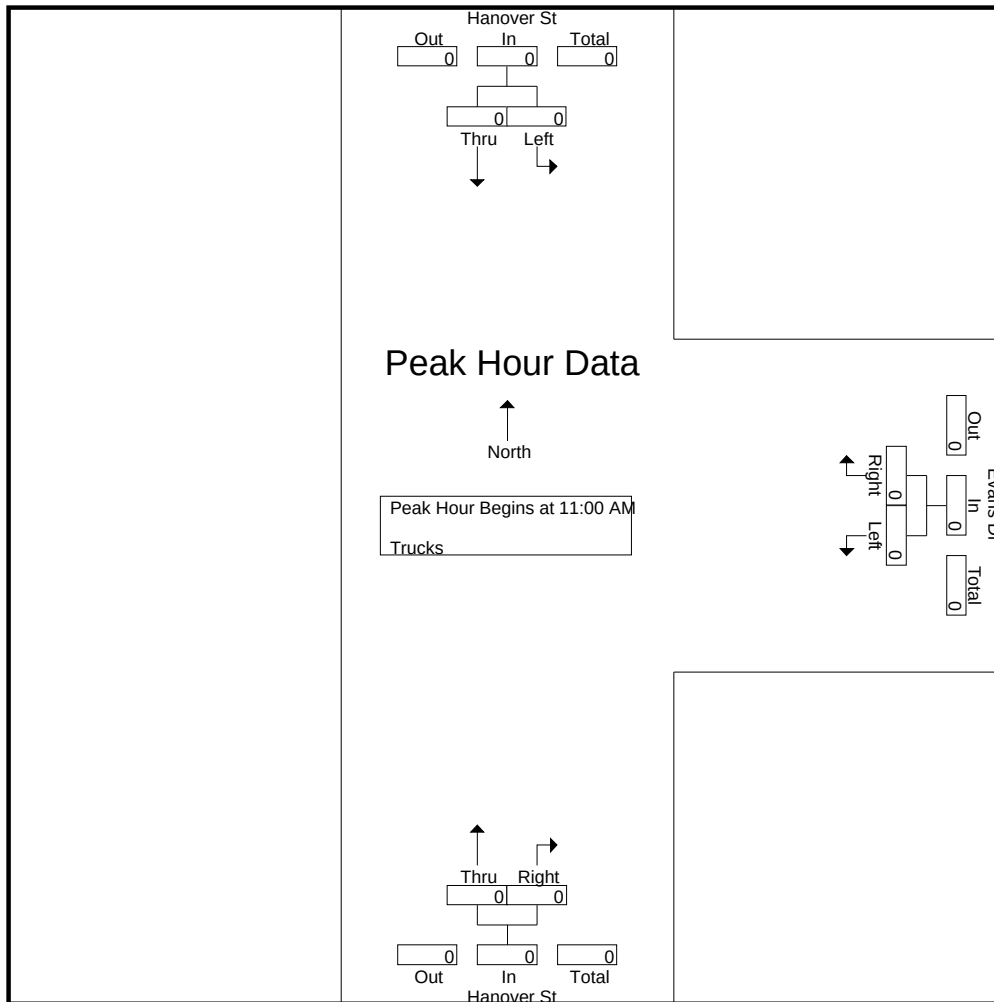


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S1  
 Site Code : 52933001  
 Start Date : 11/12/2022  
 Page No : 8

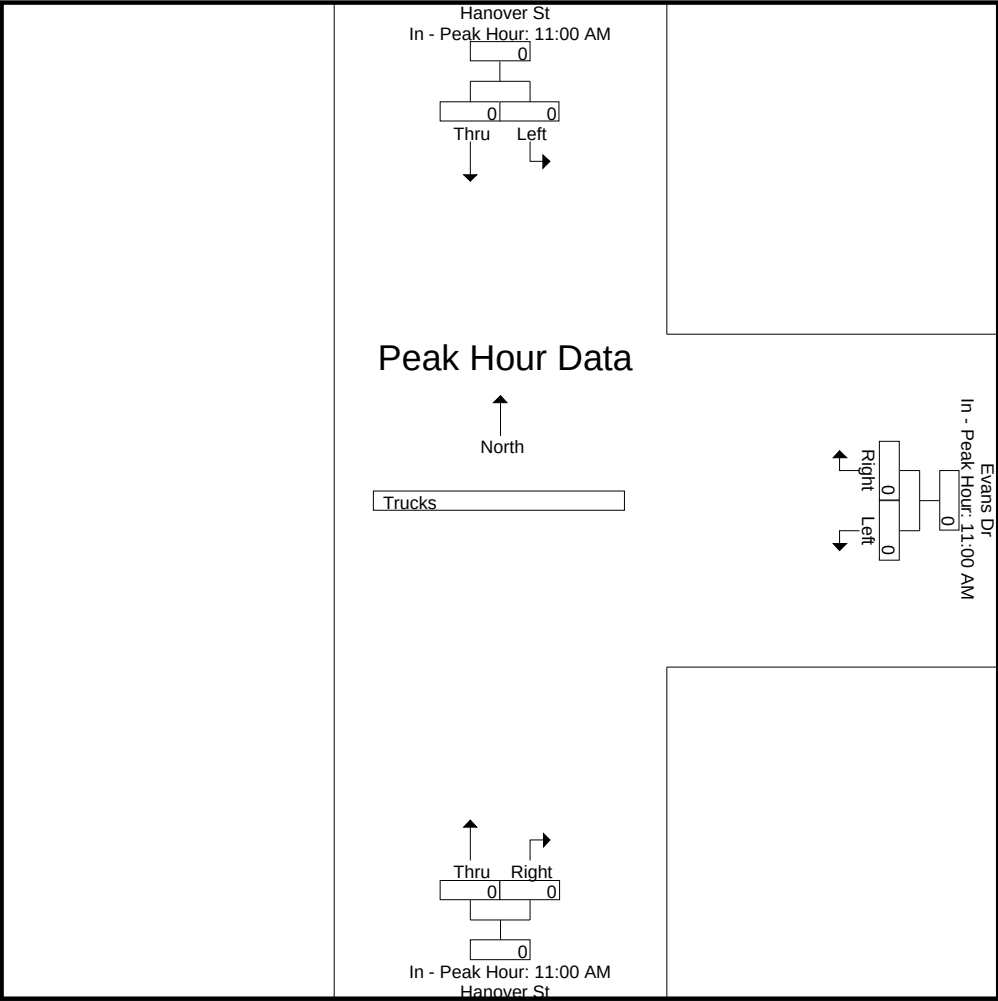


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 0    |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .000 | .000 | .000     | .000 | .000 |

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Evans Dr<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|-----------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                  | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 11:00 AM    | 0                        | 2    | 0    | 0                     | 0     | 2    | 0                        | 0     | 0    | 2            | 2            | 4          |
| 11:15 AM    | 0                        | 1    | 0    | 0                     | 0     | 4    | 1                        | 0     | 0    | 4            | 2            | 6          |
| 11:30 AM    | 0                        | 0    | 0    | 0                     | 0     | 2    | 0                        | 0     | 0    | 2            | 0            | 2          |
| 11:45 AM    | 0                        | 0    | 0    | 0                     | 0     | 3    | 0                        | 1     | 0    | 3            | 1            | 4          |
| Total       | 0                        | 3    | 0    | 0                     | 0     | 11   | 1                        | 1     | 0    | 11           | 5            | 16         |
| 12:00 PM    | 0                        | 0    | 0    | 0                     | 0     | 0    | 1                        | 0     | 0    | 0            | 1            | 1          |
| 12:15 PM    | 0                        | 1    | 0    | 0                     | 0     | 0    | 2                        | 0     | 0    | 0            | 3            | 3          |
| 12:30 PM    | 0                        | 0    | 0    | 0                     | 0     | 1    | 0                        | 0     | 0    | 1            | 0            | 1          |
| 12:45 PM    | 0                        | 0    | 0    | 0                     | 0     | 1    | 1                        | 0     | 0    | 1            | 1            | 2          |
| Total       | 0                        | 1    | 0    | 0                     | 0     | 2    | 4                        | 0     | 0    | 2            | 5            | 7          |
| Grand Total | 0                        | 4    | 0    | 0                     | 0     | 13   | 5                        | 1     | 0    | 13           | 10           | 23         |
| Apprch %    | 0                        | 100  |      | 0                     | 0     |      | 83.3                     | 16.7  |      |              |              |            |
| Total %     | 0                        | 40   |      | 0                     | 0     |      | 50                       | 10    |      | 56.5         | 43.5         |            |

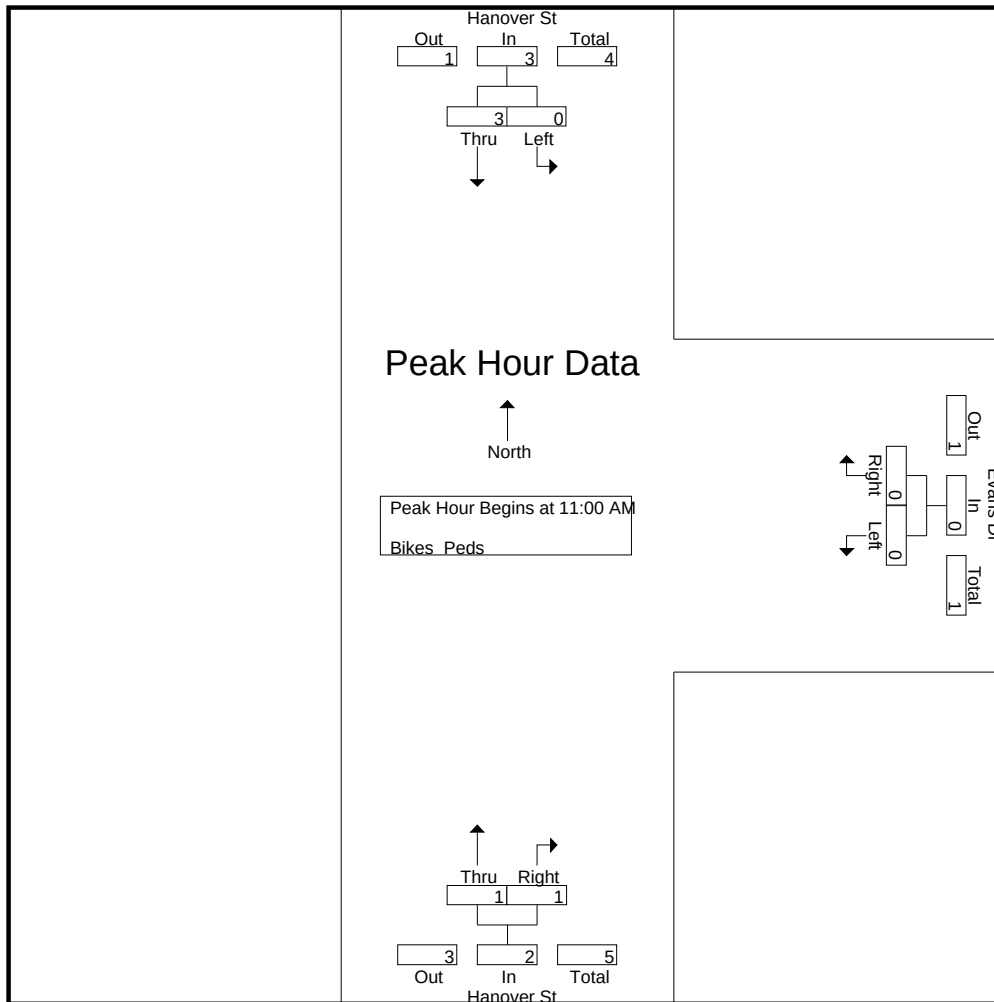
|                                                            | Hanover St<br>From North |      |            | Evans Dr<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|-----------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                  | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                          |      |            |                       |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                          |      |            |                       |       |            |                          |       |            |            |
| 11:00 AM                                                   | 0                        | 2    | 2          | 0                     | 0     | 0          | 0                        | 0     | 0          | 2          |
| 11:15 AM                                                   | 0                        | 1    | 1          | 0                     | 0     | 0          | 1                        | 0     | 1          | 2          |
| 11:30 AM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                        | 0    | 0          | 0                     | 0     | 0          | 0                        | 1     | 1          | 1          |
| Total Volume                                               | 0                        | 3    | 3          | 0                     | 0     | 0          | 1                        | 1     | 2          | 5          |
| % App. Total                                               | 0                        | 100  |            | 0                     | 0     |            | 50                       | 50    |            |            |
| PHF                                                        | .000                     | .375 | .375       | .000                  | .000  | .000       | .250                     | .250  | .500       | .625       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S1  
 Site Code : 52933001  
 Start Date : 11/12/2022  
 Page No : 11



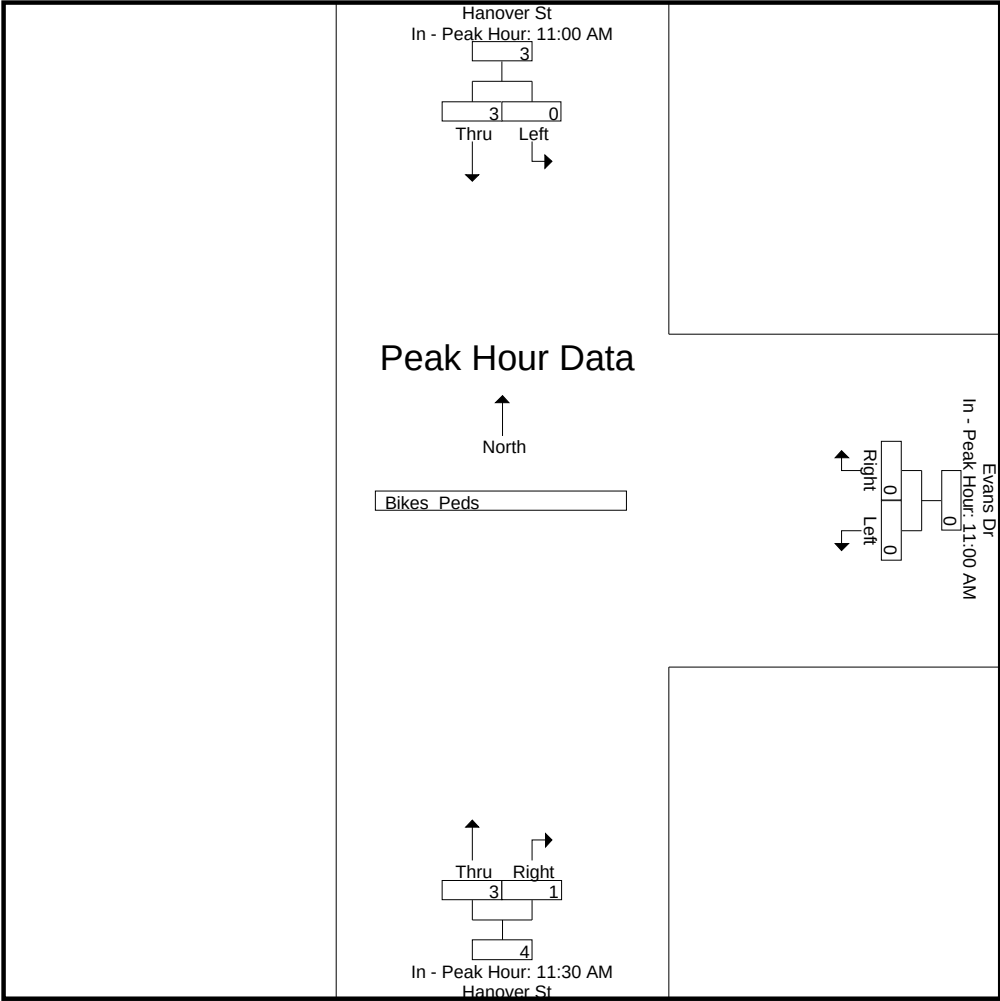
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:30 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 2    | 2    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 0        | 1    | 1    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 0    | 1    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 2        | 0    | 2    |
| Total Volume | 0        | 3    | 3    | 0        | 0    | 0    | 3        | 1    | 4    |
| % App. Total | 0        | 100  |      | 0        | 0    |      | 75       | 25   |      |
| PHF          | .000     | .375 | .375 | .000     | .000 | .000 | .375     | .250 | .500 |



N/S Street : Hanover Street  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S1  
Site Code : 52933001  
Start Date : 11/12/2022  
Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 07:00 AM    | 0                        | 2    | 21                       | 0     | 9                        | 15    | 47         |
| 07:15 AM    | 0                        | 5    | 39                       | 0     | 13                       | 40    | 97         |
| 07:30 AM    | 0                        | 5    | 15                       | 0     | 14                       | 31    | 65         |
| 07:45 AM    | 1                        | 3    | 28                       | 0     | 12                       | 33    | 77         |
| Total       | 1                        | 15   | 103                      | 0     | 48                       | 119   | 286        |
| 08:00 AM    | 0                        | 6    | 7                        | 0     | 13                       | 22    | 48         |
| 08:15 AM    | 0                        | 3    | 4                        | 0     | 11                       | 10    | 28         |
| 08:30 AM    | 0                        | 4    | 1                        | 0     | 4                        | 4     | 13         |
| 08:45 AM    | 0                        | 2    | 4                        | 0     | 3                        | 2     | 11         |
| Total       | 0                        | 15   | 16                       | 0     | 31                       | 38    | 100        |
| Grand Total | 1                        | 30   | 119                      | 0     | 79                       | 157   | 386        |
| Apprch %    | 3.2                      | 96.8 | 100                      | 0     | 33.5                     | 66.5  |            |
| Total %     | 0.3                      | 7.8  | 30.8                     | 0     | 20.5                     | 40.7  |            |
| Cars        | 1                        | 29   | 118                      | 0     | 76                       | 152   | 376        |
| % Cars      | 100                      | 96.7 | 99.2                     | 0     | 96.2                     | 96.8  | 97.4       |
| Trucks      | 0                        | 1    | 1                        | 0     | 3                        | 5     | 10         |
| % Trucks    | 0                        | 3.3  | 0.8                      | 0     | 3.8                      | 3.2   | 2.6        |

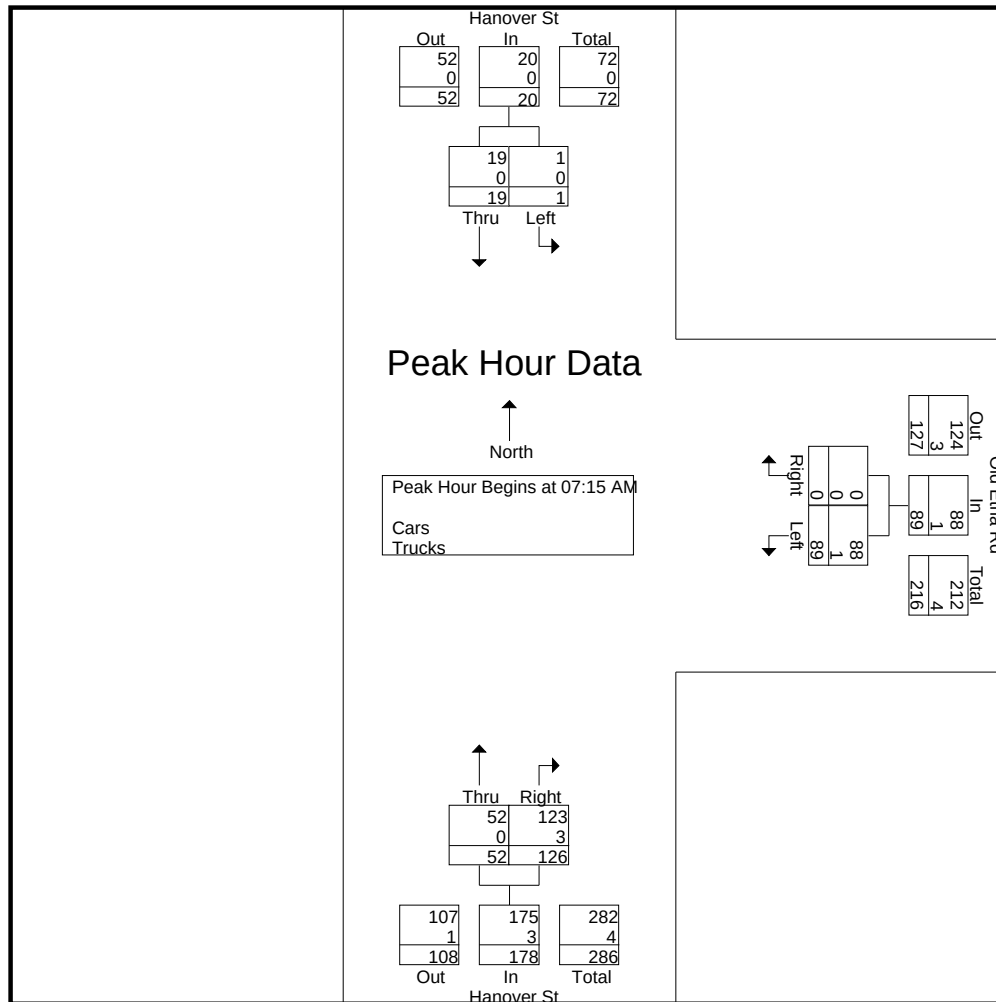
|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 07:15 AM                                                   | 0                        | 5    | 5          | 39                       | 0     | 39         | 13                       | 40    | 53         | 97         |
| 07:30 AM                                                   | 0                        | 5    | 5          | 15                       | 0     | 15         | 14                       | 31    | 45         | 65         |
| 07:45 AM                                                   | 1                        | 3    | 4          | 28                       | 0     | 28         | 12                       | 33    | 45         | 77         |
| 08:00 AM                                                   | 0                        | 6    | 6          | 7                        | 0     | 7          | 13                       | 22    | 35         | 48         |
| Total Volume                                               | 1                        | 19   | 20         | 89                       | 0     | 89         | 52                       | 126   | 178        | 287        |
| % App. Total                                               | 5                        | 95   |            | 100                      | 0     |            | 29.2                     | 70.8  |            |            |
| PHF                                                        | .250                     | .792 | .833       | .571                     | .000  | .571       | .929                     | .788  | .840       | .740       |
| Cars                                                       | 1                        | 19   | 20         | 88                       | 0     | 88         | 52                       | 123   | 175        | 283        |
| % Cars                                                     | 100                      | 100  | 100        | 98.9                     | 0     | 98.9       | 100                      | 97.6  | 98.3       | 98.6       |
| Trucks                                                     | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 3     | 3          | 4          |
| % Trucks                                                   | 0                        | 0    | 0          | 1.1                      | 0     | 1.1        | 0                        | 2.4   | 1.7        | 1.4        |



**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

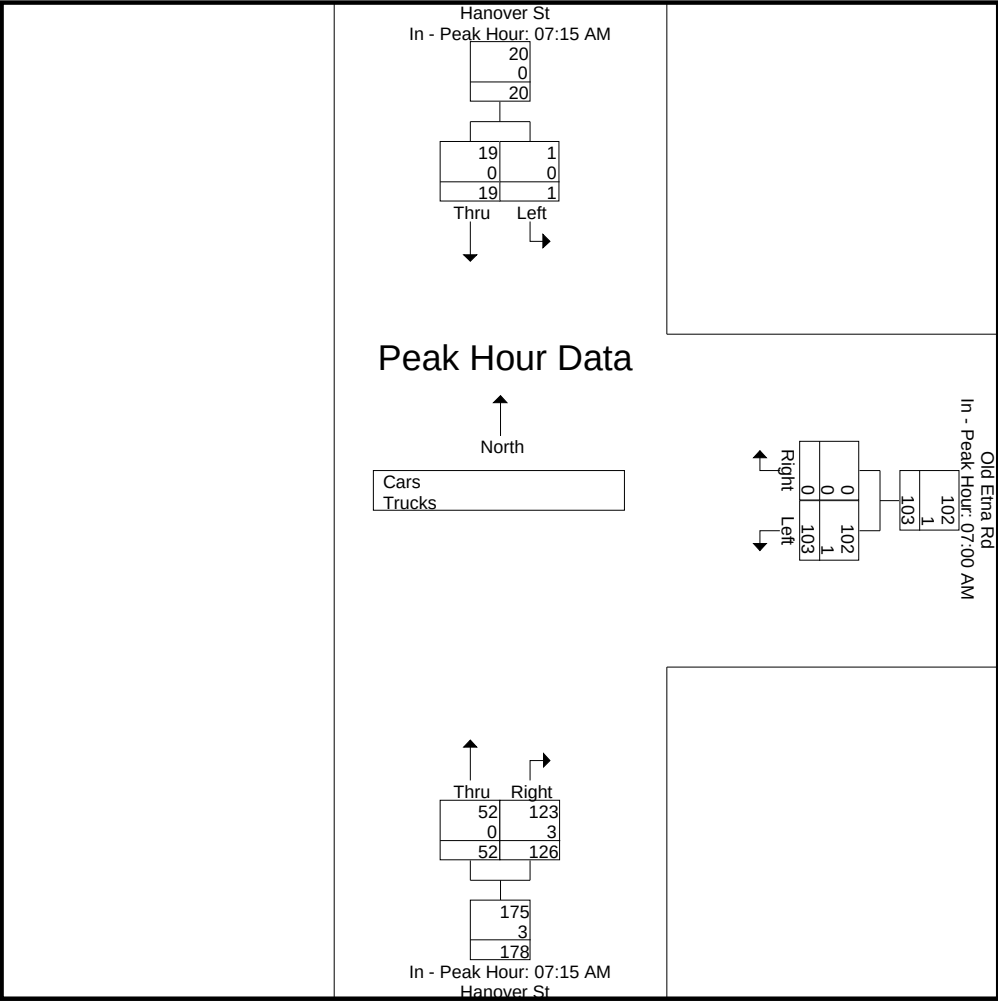
|              | 07:15 AM |          |          | 07:00 AM  |      |           | 07:15 AM  |           |           |
|--------------|----------|----------|----------|-----------|------|-----------|-----------|-----------|-----------|
| +0 mins.     | 0        | 5        | 5        | 21        | 0    | 21        | 13        | <b>40</b> | <b>53</b> |
| +15 mins.    | 0        | 5        | 5        | <b>39</b> | 0    | <b>39</b> | <b>14</b> | 31        | 45        |
| +30 mins.    | <b>1</b> | 3        | 4        | 15        | 0    | 15        | 12        | 33        | 45        |
| +45 mins.    | 0        | <b>6</b> | <b>6</b> | 28        | 0    | 28        | 13        | 22        | 35        |
| Total Volume | 1        | 19       | 20       | 103       | 0    | 103       | 52        | 126       | 178       |
| % App. Total | 5        | 95       |          | 100       | 0    |           | 29.2      | 70.8      |           |
| PHF          | .250     | .792     | .833     | .660      | .000 | .660      | .929      | .788      | .840      |
| Cars         | 1        | 19       | 20       | 102       | 0    | 102       | 52        | 123       | 175       |
| % Cars       | 100      | 100      | 100      | 99        | 0    | 99        | 100       | 97.6      | 98.3      |
| Trucks       | 0        | 0        | 0        | 1         | 0    | 1         | 0         | 3         | 3         |
| % Trucks     | 0        | 0        | 0        | 1         | 0    | 1         | 0         | 2.4       | 1.7       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 3





**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 4

**Groups Printed- Cars**

|             | <b>Hanover St<br/>From North</b> |      | <b>Old Etna Rd<br/>From East</b> |       | <b>Hanover St<br/>From South</b> |       |            |
|-------------|----------------------------------|------|----------------------------------|-------|----------------------------------|-------|------------|
| Start Time  | Left                             | Thru | Left                             | Right | Thru                             | Right | Int. Total |
| 07:00 AM    | 0                                | 1    | 21                               | 0     | 8                                | 13    | 43         |
| 07:15 AM    | 0                                | 5    | 39                               | 0     | 13                               | 39    | 96         |
| 07:30 AM    | 0                                | 5    | 15                               | 0     | 14                               | 31    | 65         |
| 07:45 AM    | 1                                | 3    | 27                               | 0     | 12                               | 32    | 75         |
| Total       | 1                                | 14   | 102                              | 0     | 47                               | 115   | 279        |
| 08:00 AM    | 0                                | 6    | 7                                | 0     | 13                               | 21    | 47         |
| 08:15 AM    | 0                                | 3    | 4                                | 0     | 10                               | 10    | 27         |
| 08:30 AM    | 0                                | 4    | 1                                | 0     | 3                                | 4     | 12         |
| 08:45 AM    | 0                                | 2    | 4                                | 0     | 3                                | 2     | 11         |
| Total       | 0                                | 15   | 16                               | 0     | 29                               | 37    | 97         |
| Grand Total | 1                                | 29   | 118                              | 0     | 76                               | 152   | 376        |
| Apprch %    | 3.3                              | 96.7 | 100                              | 0     | 33.3                             | 66.7  |            |
| Total %     | 0.3                              | 7.7  | 31.4                             | 0     | 20.2                             | 40.4  |            |

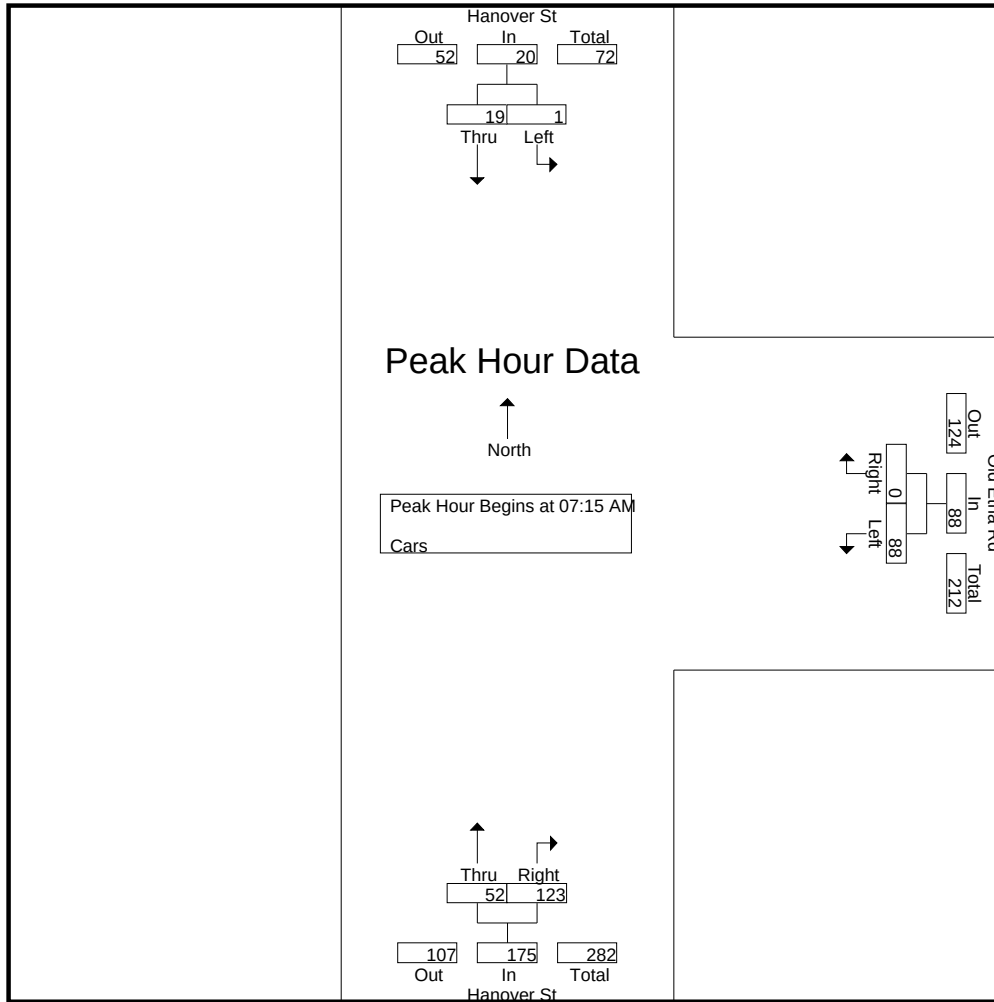
|                                                            | <b>Hanover St<br/>From North</b> |          |            | <b>Old Etna Rd<br/>From East</b> |       |            | <b>Hanover St<br/>From South</b> |           |            |            |
|------------------------------------------------------------|----------------------------------|----------|------------|----------------------------------|-------|------------|----------------------------------|-----------|------------|------------|
| Start Time                                                 | Left                             | Thru     | App. Total | Left                             | Right | App. Total | Thru                             | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                                  |          |            |                                  |       |            |                                  |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                                  |          |            |                                  |       |            |                                  |           |            |            |
| 07:15 AM                                                   | 0                                | 5        | 5          | <b>39</b>                        | 0     | <b>39</b>  | 13                               | <b>39</b> | <b>52</b>  | <b>96</b>  |
| 07:30 AM                                                   | 0                                | 5        | 5          | 15                               | 0     | 15         | <b>14</b>                        | 31        | 45         | 65         |
| 07:45 AM                                                   | <b>1</b>                         | 3        | 4          | 27                               | 0     | 27         | 12                               | 32        | 44         | 75         |
| 08:00 AM                                                   | 0                                | <b>6</b> | <b>6</b>   | 7                                | 0     | 7          | 13                               | 21        | 34         | 47         |
| Total Volume                                               | 1                                | 19       | 20         | 88                               | 0     | 88         | 52                               | 123       | 175        | 283        |
| % App. Total                                               | 5                                | 95       |            | 100                              | 0     |            | 29.7                             | 70.3      |            |            |
| PHF                                                        | .250                             | .792     | .833       | .564                             | .000  | .564       | .929                             | .788      | .841       | .737       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 5



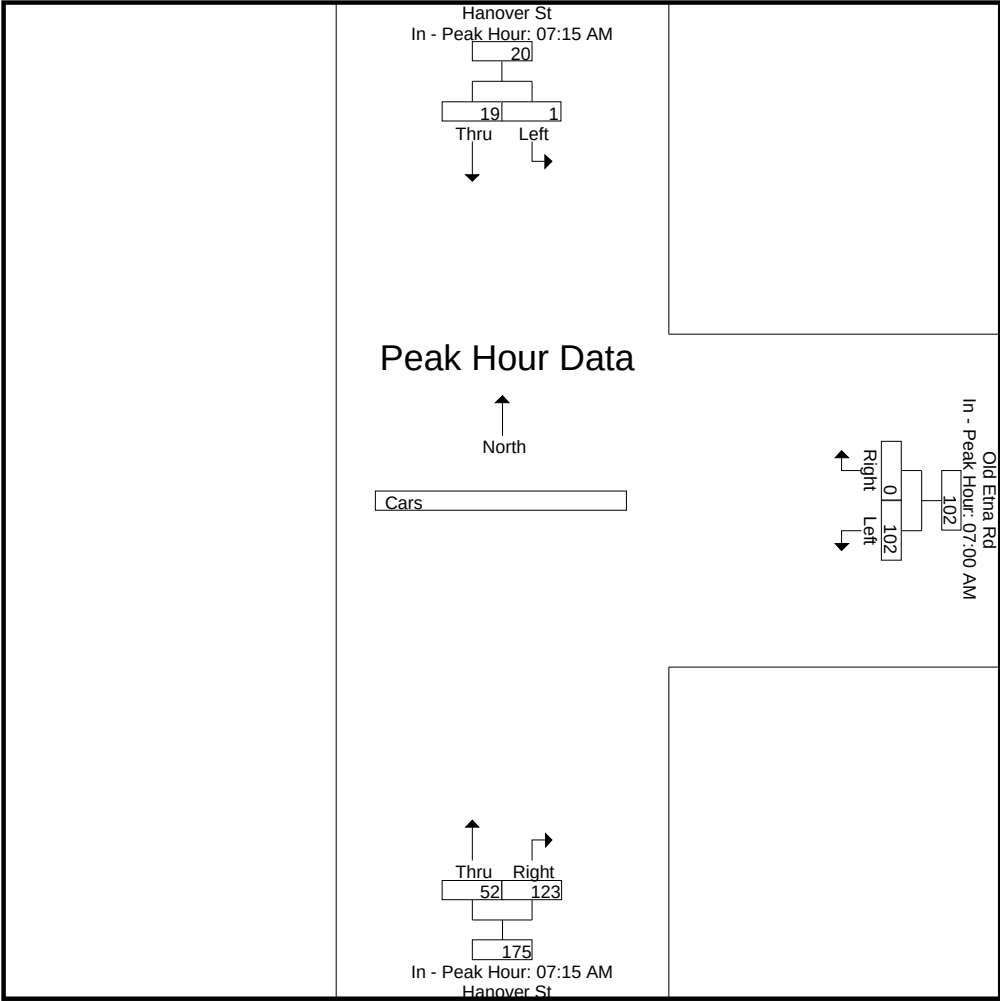
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:15 AM |          |          | 07:00 AM  |      |           | 07:15 AM  |           |           |
|--------------|----------|----------|----------|-----------|------|-----------|-----------|-----------|-----------|
| +0 mins.     | 0        | 5        | 5        | 21        | 0    | 21        | 13        | <b>39</b> | <b>52</b> |
| +15 mins.    | 0        | 5        | 5        | <b>39</b> | 0    | <b>39</b> | <b>14</b> | 31        | 45        |
| +30 mins.    | <b>1</b> | 3        | 4        | 15        | 0    | 15        | 12        | 32        | 44        |
| +45 mins.    | 0        | <b>6</b> | <b>6</b> | 27        | 0    | 27        | 13        | 21        | 34        |
| Total Volume | 1        | 19       | 20       | 102       | 0    | 102       | 52        | 123       | 175       |
| % App. Total | 5        | 95       |          | 100       | 0    |           | 29.7      | 70.3      |           |
| PHF          | .250     | .792     | .833     | .654      | .000 | .654      | .929      | .788      | .841      |



N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 7

## Groups Printed- Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 07:00 AM    | 0                        | 1    | 0                        | 0     | 1                        | 2     | 4          |
| 07:15 AM    | 0                        | 0    | 0                        | 0     | 0                        | 1     | 1          |
| 07:30 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 07:45 AM    | 0                        | 0    | 1                        | 0     | 0                        | 1     | 2          |
| Total       | 0                        | 1    | 1                        | 0     | 1                        | 4     | 7          |
| 08:00 AM    | 0                        | 0    | 0                        | 0     | 0                        | 1     | 1          |
| 08:15 AM    | 0                        | 0    | 0                        | 0     | 1                        | 0     | 1          |
| 08:30 AM    | 0                        | 0    | 0                        | 0     | 1                        | 0     | 1          |
| 08:45 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                        | 0     | 2                        | 1     | 3          |
| Grand Total | 0                        | 1    | 1                        | 0     | 3                        | 5     | 10         |
| Apprch %    | 0                        | 100  | 100                      | 0     | 37.5                     | 62.5  |            |
| Total %     | 0                        | 10   | 10                       | 0     | 30                       | 50    |            |

|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 07:00 AM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 1                        | 2     | 3          | 4          |
| 07:15 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 1     | 1          | 1          |
| 07:30 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 07:45 AM                                                   | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 1     | 1          | 2          |
| Total Volume                                               | 0                        | 1    | 1          | 1                        | 0     | 1          | 1                        | 4     | 5          | 7          |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 20                       | 80    |            |            |
| PHF                                                        | .000                     | .250 | .250       | .250                     | .000  | .250       | .250                     | .500  | .417       | .438       |

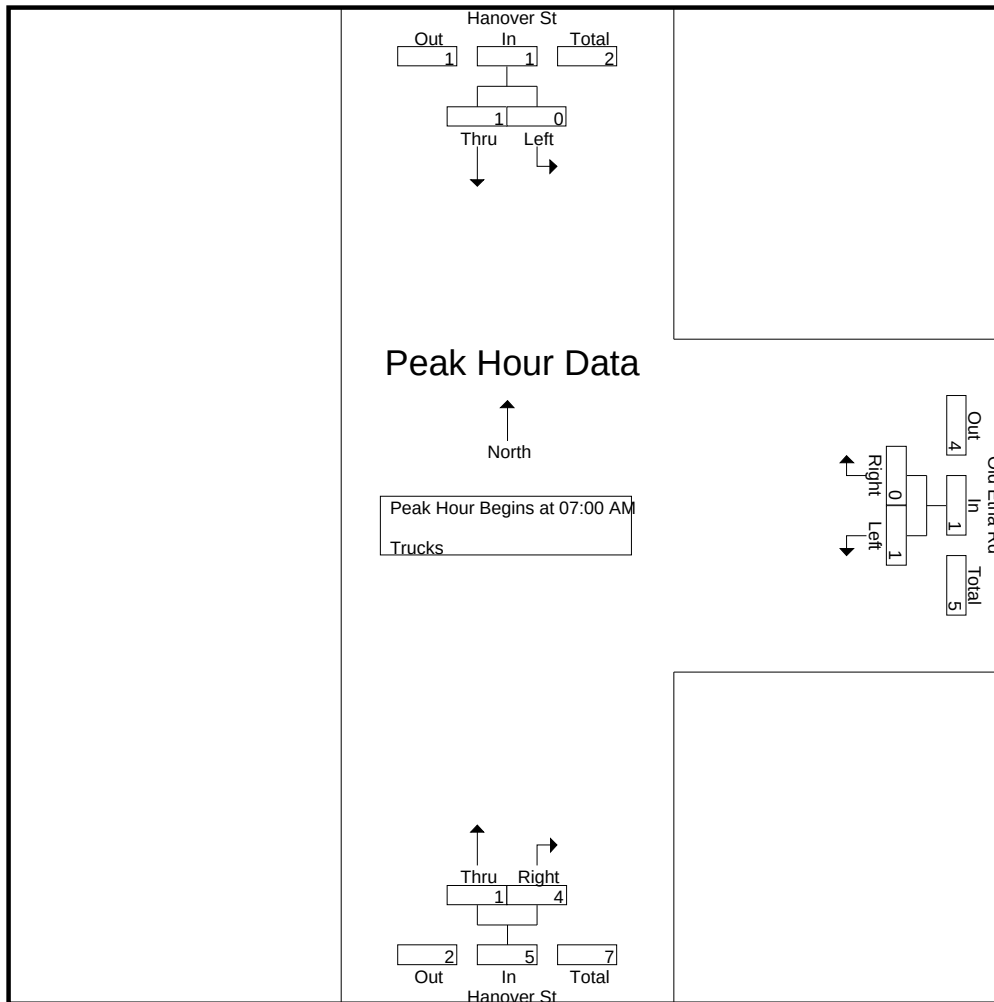


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 8

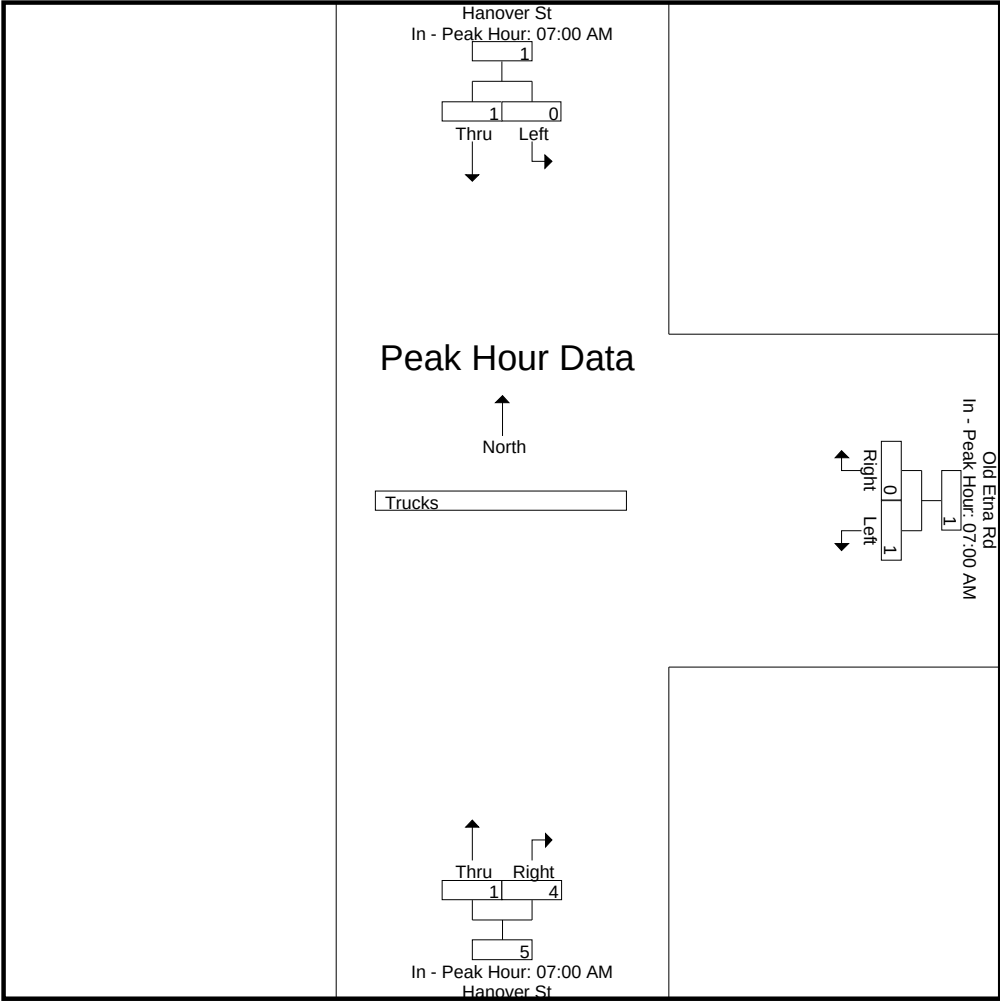


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:00 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 1    | 1    | 0        | 0    | 0    | 1        | 2    | 3    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 1    | 1    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 1        | 0    | 1    | 0        | 1    | 1    |
| Total Volume | 0        | 1    | 1    | 1        | 0    | 1    | 1        | 4    | 5    |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 20       | 80   |      |
| PHF          | .000     | .250 | .250 | .250     | .000 | .250 | .250     | .500 | .417 |

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Old Etna Rd<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|--------------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                     | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 07:00 AM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 07:15 AM    | 0                        | 1    | 2    | 0                        | 0     | 0    | 1                        | 0     | 2    | 4            | 2            | 6          |
| 07:30 AM    | 0                        | 0    | 0    | 1                        | 0     | 0    | 0                        | 0     | 0    | 0            | 1            | 1          |
| 07:45 AM    | 0                        | 1    | 0    | 0                        | 0     | 6    | 1                        | 0     | 0    | 6            | 2            | 8          |
| Total       | 0                        | 2    | 2    | 1                        | 0     | 6    | 2                        | 0     | 2    | 10           | 5            | 15         |
| 08:00 AM    | 0                        | 0    | 0    | 0                        | 0     | 5    | 0                        | 0     | 1    | 6            | 0            | 6          |
| 08:15 AM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 08:30 AM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 08:45 AM    | 0                        | 0    | 0    | 0                        | 0     | 1    | 0                        | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                        | 0    | 0    | 0                        | 0     | 6    | 0                        | 0     | 1    | 7            | 0            | 7          |
| Grand Total | 0                        | 2    | 2    | 1                        | 0     | 12   | 2                        | 0     | 3    | 17           | 5            | 22         |
| Apprch %    | 0                        | 100  |      | 100                      | 0     |      | 100                      | 0     |      |              |              |            |
| Total %     | 0                        | 40   |      | 20                       | 0     |      | 40                       | 0     |      | 77.3         | 22.7         |            |

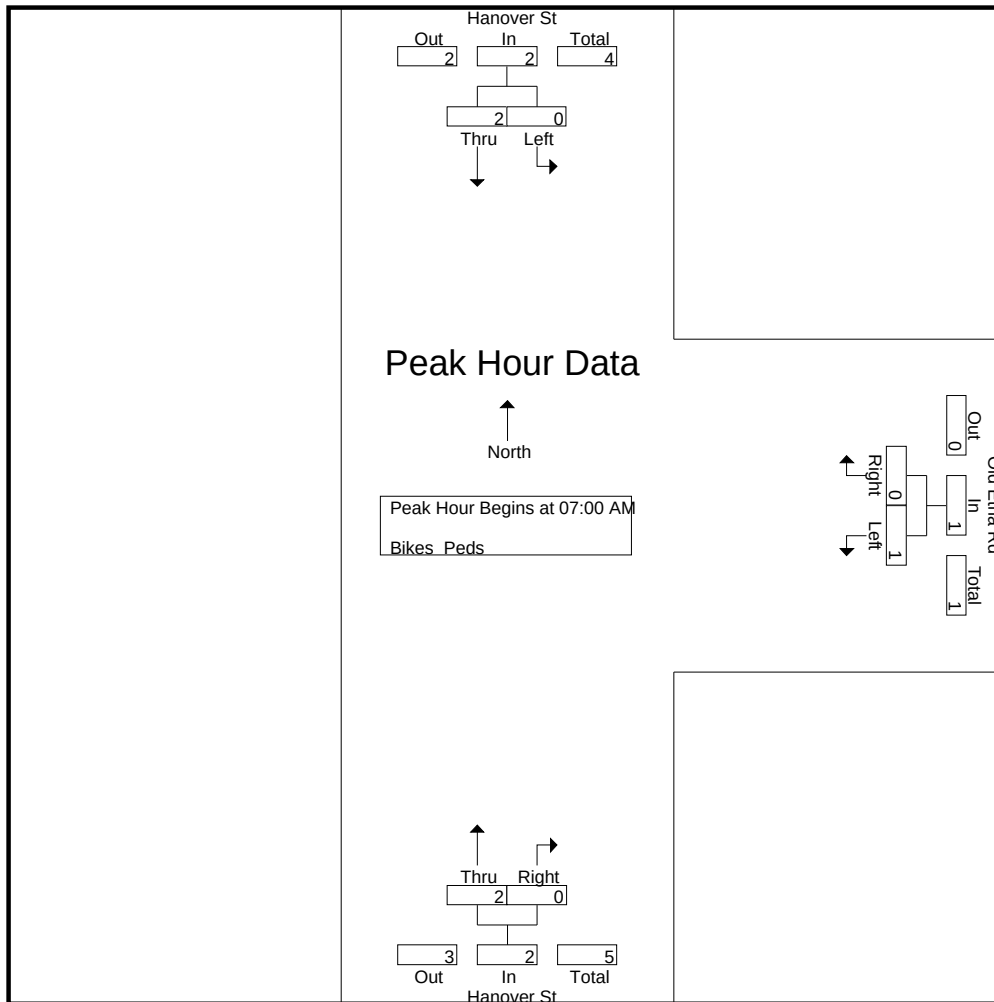
|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 07:00 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 07:15 AM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 1                        | 0     | 1          | 2          |
| 07:30 AM                                                   | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 0     | 0          | 1          |
| 07:45 AM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 1                        | 0     | 1          | 2          |
| Total Volume                                               | 0                        | 2    | 2          | 1                        | 0     | 1          | 2                        | 0     | 2          | 5          |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 100                      | 0     |            |            |
| PHF                                                        | .000                     | .500 | .500       | .250                     | .000  | .250       | .500                     | .000  | .500       | .625       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 11



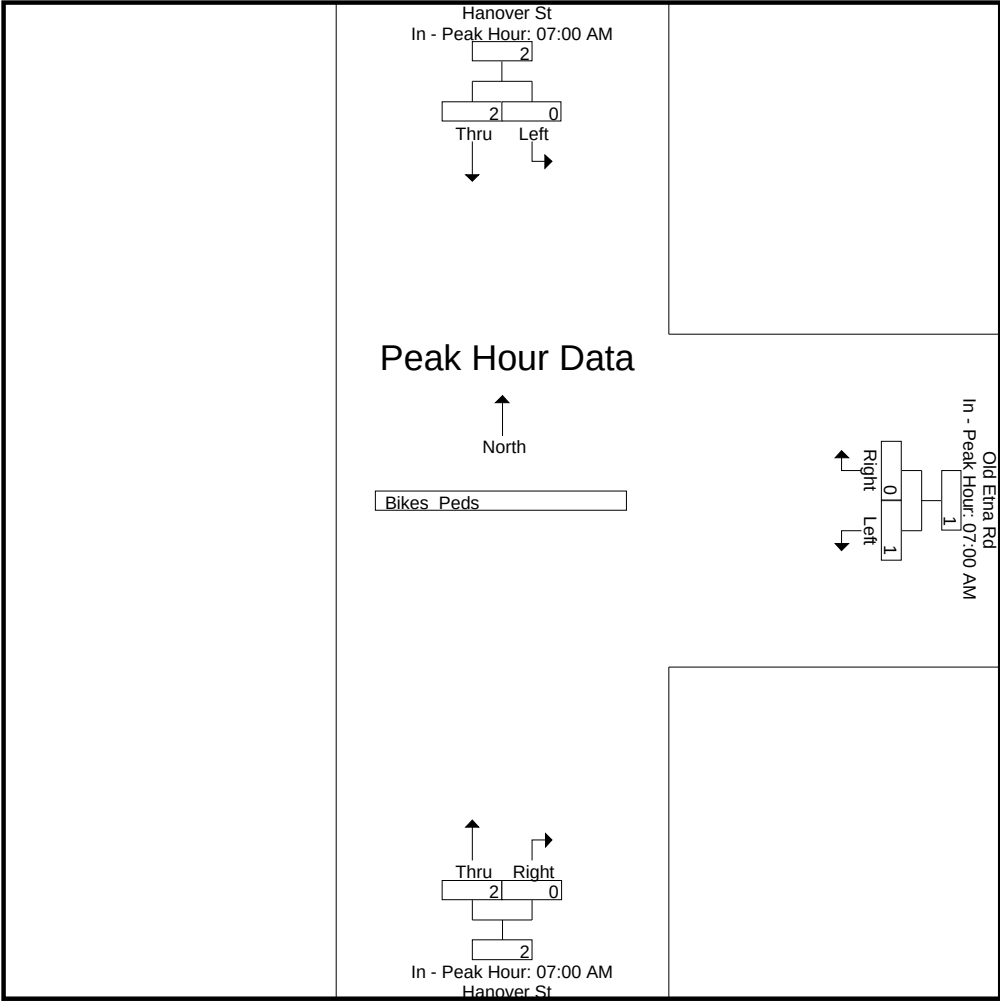
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:00 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 1        | 0    | 1    |
| +30 mins.    | 0        | 0    | 0    | 1        | 0    | 1    | 0        | 0    | 0    |
| +45 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 1        | 0    | 1    |
| Total Volume | 0        | 2    | 2    | 1        | 0    | 1    | 2        | 0    | 2    |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 100      | 0    |      |
| PHF          | .000     | .500 | .500 | .250     | .000 | .250 | .500     | .000 | .500 |



N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 1

## Groups Printed- Cars - Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 0                        | 9    | 8                        | 0     | 7                        | 22    | 46         |
| 02:15 PM    | 0                        | 2    | 13                       | 1     | 2                        | 19    | 37         |
| 02:30 PM    | 1                        | 3    | 16                       | 0     | 3                        | 24    | 47         |
| 02:45 PM    | 1                        | 6    | 18                       | 0     | 5                        | 20    | 50         |
| Total       | 2                        | 20   | 55                       | 1     | 17                       | 85    | 180        |
| 03:00 PM    | 0                        | 5    | 19                       | 0     | 11                       | 69    | 104        |
| 03:15 PM    | 0                        | 1    | 5                        | 1     | 8                        | 18    | 33         |
| 03:30 PM    | 0                        | 6    | 5                        | 0     | 3                        | 15    | 29         |
| 03:45 PM    | 0                        | 8    | 11                       | 1     | 1                        | 5     | 26         |
| Total       | 0                        | 20   | 40                       | 2     | 23                       | 107   | 192        |
| 04:00 PM    | 0                        | 7    | 5                        | 1     | 5                        | 9     | 27         |
| 04:15 PM    | 2                        | 9    | 5                        | 1     | 2                        | 7     | 26         |
| 04:30 PM    | 0                        | 7    | 5                        | 0     | 2                        | 8     | 22         |
| 04:45 PM    | 0                        | 8    | 6                        | 1     | 6                        | 9     | 30         |
| Total       | 2                        | 31   | 21                       | 3     | 15                       | 33    | 105        |
| 05:00 PM    | 0                        | 9    | 8                        | 0     | 4                        | 21    | 42         |
| 05:15 PM    | 0                        | 6    | 9                        | 0     | 1                        | 7     | 23         |
| 05:30 PM    | 0                        | 9    | 1                        | 0     | 3                        | 5     | 18         |
| 05:45 PM    | 0                        | 5    | 2                        | 0     | 5                        | 5     | 17         |
| Total       | 0                        | 29   | 20                       | 0     | 13                       | 38    | 100        |
| Grand Total | 4                        | 100  | 136                      | 6     | 68                       | 263   | 577        |
| Apprch %    | 3.8                      | 96.2 | 95.8                     | 4.2   | 20.5                     | 79.5  |            |
| Total %     | 0.7                      | 17.3 | 23.6                     | 1     | 11.8                     | 45.6  |            |
| Cars        | 4                        | 99   | 133                      | 6     | 64                       | 249   | 555        |
| % Cars      | 100                      | 99   | 97.8                     | 100   | 94.1                     | 94.7  | 96.2       |
| Trucks      | 0                        | 1    | 3                        | 0     | 4                        | 14    | 22         |
| % Trucks    | 0                        | 1    | 2.2                      | 0     | 5.9                      | 5.3   | 3.8        |

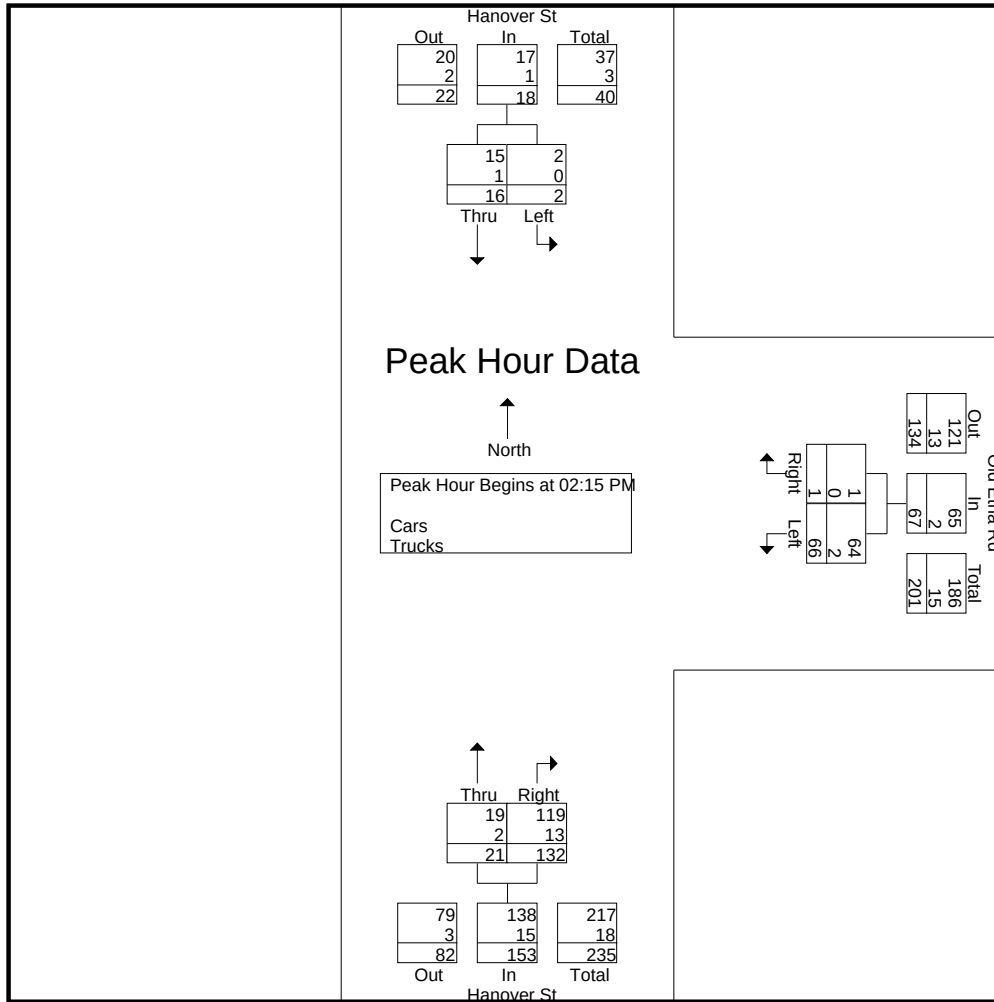
|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                          |      |            |                          |       |            |                          |       |            |            |
| 02:15 PM                                                   | 0                        | 2    | 2          | 13                       | 1     | 14         | 2                        | 19    | 21         | 37         |
| 02:30 PM                                                   | 1                        | 3    | 4          | 16                       | 0     | 16         | 3                        | 24    | 27         | 47         |
| 02:45 PM                                                   | 1                        | 6    | 7          | 18                       | 0     | 18         | 5                        | 20    | 25         | 50         |
| 03:00 PM                                                   | 0                        | 5    | 5          | 19                       | 0     | 19         | 11                       | 69    | 80         | 104        |
| Total Volume                                               | 2                        | 16   | 18         | 66                       | 1     | 67         | 21                       | 132   | 153        | 238        |
| % App. Total                                               | 11.1                     | 88.9 |            | 98.5                     | 1.5   |            | 13.7                     | 86.3  |            |            |
| PHF                                                        | .500                     | .667 | .643       | .868                     | .250  | .882       | .477                     | .478  | .478       | .572       |
| Cars                                                       | 2                        | 15   | 17         | 64                       | 1     | 65         | 19                       | 119   | 138        | 220        |
| % Cars                                                     | 100                      | 93.8 | 94.4       | 97.0                     | 100   | 97.0       | 90.5                     | 90.2  | 90.2       | 92.4       |
| Trucks                                                     | 0                        | 1    | 1          | 2                        | 0     | 2          | 2                        | 13    | 15         | 18         |
| % Trucks                                                   | 0                        | 6.3  | 5.6        | 3.0                      | 0     | 3.0        | 9.5                      | 9.8   | 9.8        | 7.6        |



**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 2



Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

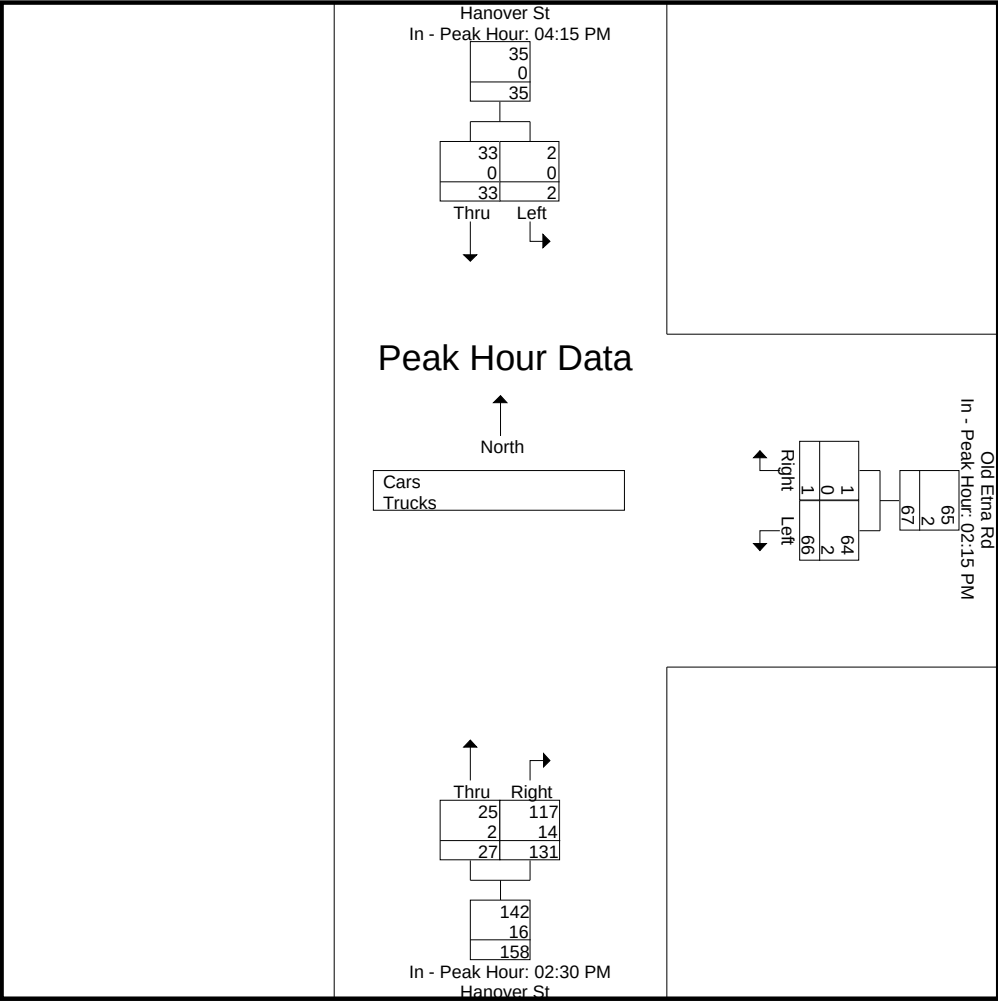
|              | 04:15 PM |      |      | 02:15 PM |      |      | 02:30 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 2        | 9    | 11   | 13       | 1    | 14   | 3        | 24   | 27   |
| +15 mins.    | 0        | 7    | 7    | 16       | 0    | 16   | 5        | 20   | 25   |
| +30 mins.    | 0        | 8    | 8    | 18       | 0    | 18   | 11       | 69   | 80   |
| +45 mins.    | 0        | 9    | 9    | 19       | 0    | 19   | 8        | 18   | 26   |
| Total Volume | 2        | 33   | 35   | 66       | 1    | 67   | 27       | 131  | 158  |
| % App. Total | 5.7      | 94.3 |      | 98.5     | 1.5  |      | 17.1     | 82.9 |      |
| PHF          | .250     | .917 | .795 | .868     | .250 | .882 | .614     | .475 | .494 |
| Cars         | 2        | 33   | 35   | 64       | 1    | 65   | 25       | 117  | 142  |
| % Cars       | 100      | 100  | 100  | 97       | 100  | 97   | 92.6     | 89.3 | 89.9 |
| Trucks       | 0        | 0    | 0    | 2        | 0    | 2    | 2        | 14   | 16   |
| % Trucks     | 0        | 0    | 0    | 3        | 0    | 3    | 7.4      | 10.7 | 10.1 |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 0                        | 9    | 8                        | 0     | 6                        | 22    | 45         |
| 02:15 PM    | 0                        | 1    | 13                       | 1     | 1                        | 19    | 35         |
| 02:30 PM    | 1                        | 3    | 16                       | 0     | 2                        | 17    | 39         |
| 02:45 PM    | 1                        | 6    | 17                       | 0     | 5                        | 17    | 46         |
| Total       | 2                        | 19   | 54                       | 1     | 14                       | 75    | 165        |
| 03:00 PM    | 0                        | 5    | 18                       | 0     | 11                       | 66    | 100        |
| 03:15 PM    | 0                        | 1    | 5                        | 1     | 7                        | 17    | 31         |
| 03:30 PM    | 0                        | 6    | 5                        | 0     | 3                        | 15    | 29         |
| 03:45 PM    | 0                        | 8    | 10                       | 1     | 1                        | 5     | 25         |
| Total       | 0                        | 20   | 38                       | 2     | 22                       | 103   | 185        |
| 04:00 PM    | 0                        | 7    | 5                        | 1     | 5                        | 9     | 27         |
| 04:15 PM    | 2                        | 9    | 5                        | 1     | 2                        | 7     | 26         |
| 04:30 PM    | 0                        | 7    | 5                        | 0     | 2                        | 8     | 22         |
| 04:45 PM    | 0                        | 8    | 6                        | 1     | 6                        | 9     | 30         |
| Total       | 2                        | 31   | 21                       | 3     | 15                       | 33    | 105        |
| 05:00 PM    | 0                        | 9    | 8                        | 0     | 4                        | 21    | 42         |
| 05:15 PM    | 0                        | 6    | 9                        | 0     | 1                        | 7     | 23         |
| 05:30 PM    | 0                        | 9    | 1                        | 0     | 3                        | 5     | 18         |
| 05:45 PM    | 0                        | 5    | 2                        | 0     | 5                        | 5     | 17         |
| Total       | 0                        | 29   | 20                       | 0     | 13                       | 38    | 100        |
| Grand Total | 4                        | 99   | 133                      | 6     | 64                       | 249   | 555        |
| Apprch %    | 3.9                      | 96.1 | 95.7                     | 4.3   | 20.4                     | 79.6  |            |
| Total %     | 0.7                      | 17.8 | 24                       | 1.1   | 11.5                     | 44.9  |            |

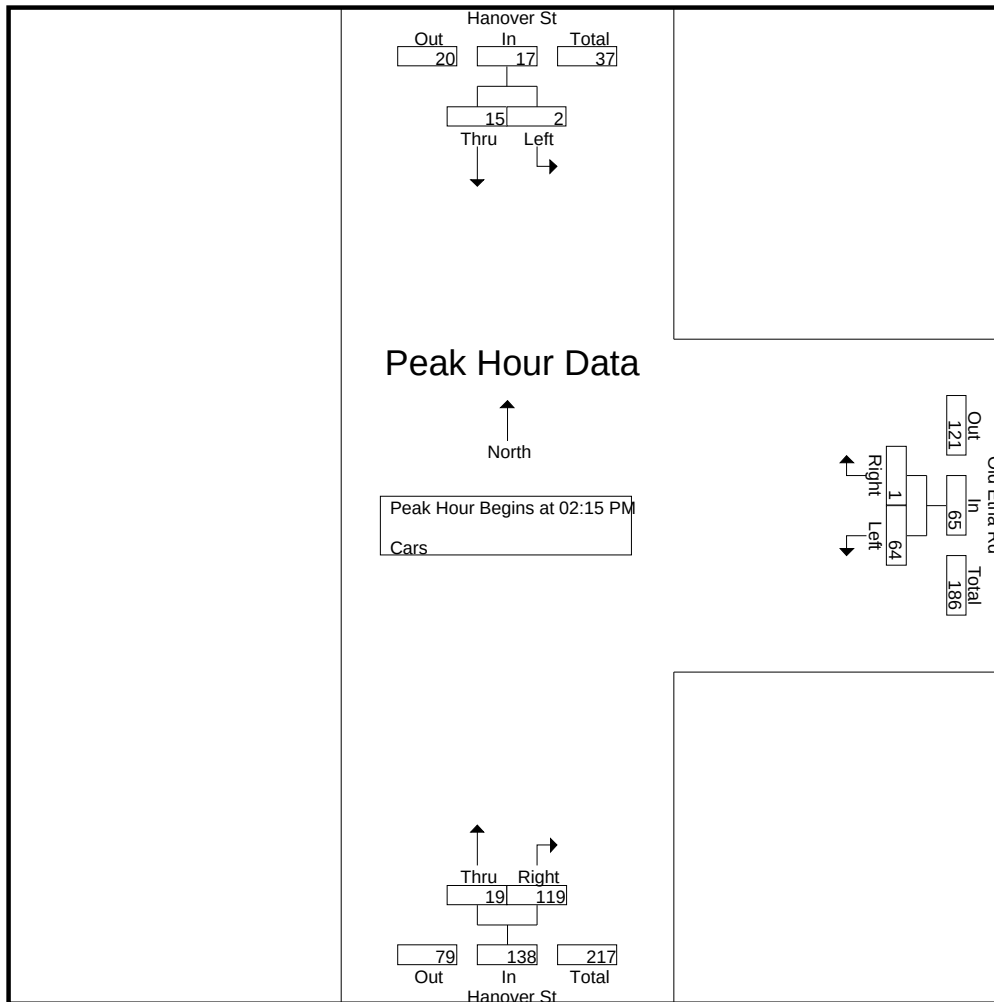
|                                                            | Hanover St<br>From North |          |            | Old Etna Rd<br>From East |          |            | Hanover St<br>From South |           |            |            |
|------------------------------------------------------------|--------------------------|----------|------------|--------------------------|----------|------------|--------------------------|-----------|------------|------------|
| Start Time                                                 | Left                     | Thru     | App. Total | Left                     | Right    | App. Total | Thru                     | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |          |            |                          |          |            |                          |           |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                          |          |            |                          |          |            |                          |           |            |            |
| 02:15 PM                                                   | 0                        | 1        | 1          | 13                       | <b>1</b> | 14         | 1                        | 19        | 20         | 35         |
| 02:30 PM                                                   | <b>1</b>                 | 3        | 4          | 16                       | 0        | 16         | 2                        | 17        | 19         | 39         |
| 02:45 PM                                                   | 1                        | <b>6</b> | <b>7</b>   | 17                       | 0        | 17         | 5                        | 17        | 22         | 46         |
| 03:00 PM                                                   | 0                        | 5        | 5          | <b>18</b>                | 0        | <b>18</b>  | <b>11</b>                | <b>66</b> | <b>77</b>  | <b>100</b> |
| Total Volume                                               | 2                        | 15       | 17         | 64                       | 1        | 65         | 19                       | 119       | 138        | 220        |
| % App. Total                                               | 11.8                     | 88.2     |            | 98.5                     | 1.5      |            | 13.8                     | 86.2      |            |            |
| PHF                                                        | .500                     | .625     | .607       | .889                     | .250     | .903       | .432                     | .451      | .448       | .550       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 5



Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

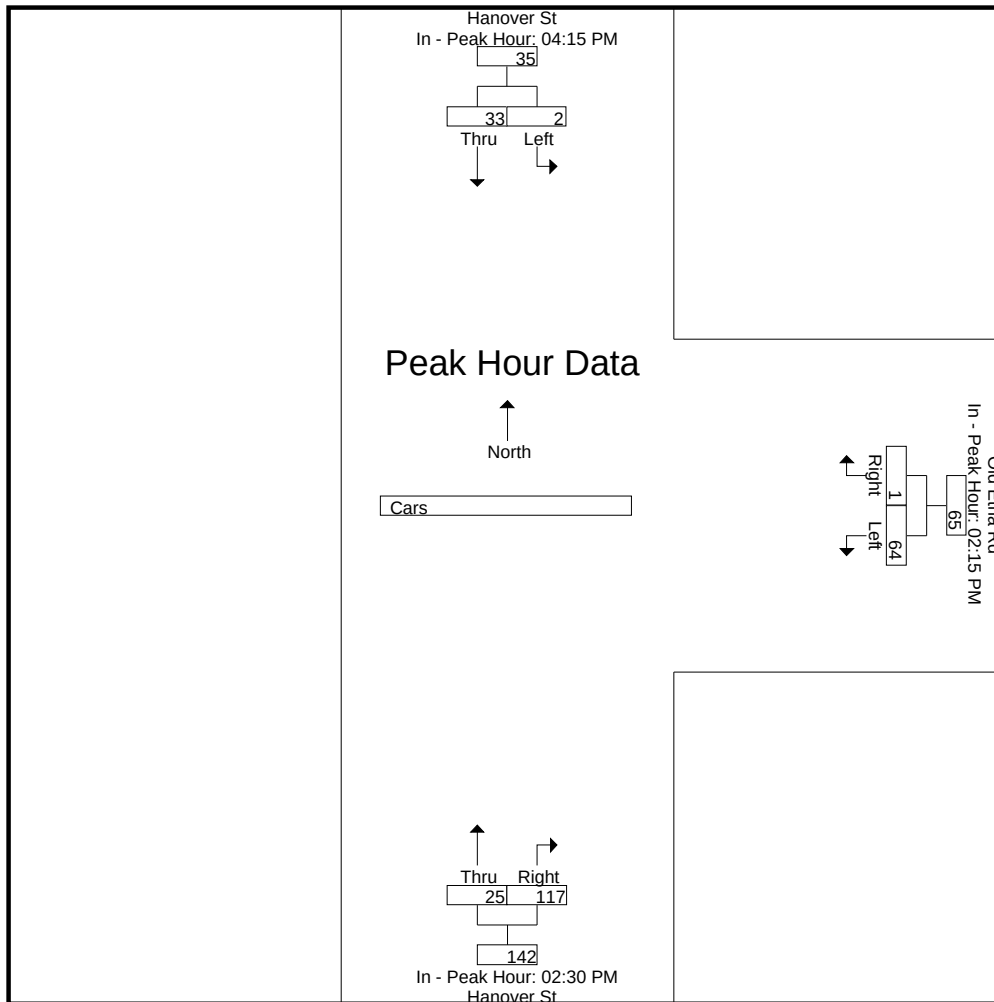
|              | 04:15 PM |      |      | 02:15 PM |      |      | 02:30 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 2        | 9    | 11   | 13       | 1    | 14   | 2        | 17   | 19   |
| +15 mins.    | 0        | 7    | 7    | 16       | 0    | 16   | 5        | 17   | 22   |
| +30 mins.    | 0        | 8    | 8    | 17       | 0    | 17   | 11       | 66   | 77   |
| +45 mins.    | 0        | 9    | 9    | 18       | 0    | 18   | 7        | 17   | 24   |
| Total Volume | 2        | 33   | 35   | 64       | 1    | 65   | 25       | 117  | 142  |
| % App. Total | 5.7      | 94.3 |      | 98.5     | 1.5  |      | 17.6     | 82.4 |      |
| PHF          | .250     | .917 | .795 | .889     | .250 | .903 | .568     | .443 | .461 |



Accurate Counts  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 02:00 PM    | 0                        | 0    | 0                        | 0     | 1                        | 0     | 1          |
| 02:15 PM    | 0                        | 1    | 0                        | 0     | 1                        | 0     | 2          |
| 02:30 PM    | 0                        | 0    | 0                        | 0     | 1                        | 7     | 8          |
| 02:45 PM    | 0                        | 0    | 1                        | 0     | 0                        | 3     | 4          |
| Total       | 0                        | 1    | 1                        | 0     | 3                        | 10    | 15         |
| 03:00 PM    | 0                        | 0    | 1                        | 0     | 0                        | 3     | 4          |
| 03:15 PM    | 0                        | 0    | 0                        | 0     | 1                        | 1     | 2          |
| 03:30 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 03:45 PM    | 0                        | 0    | 1                        | 0     | 0                        | 0     | 1          |
| Total       | 0                        | 0    | 2                        | 0     | 1                        | 4     | 7          |
| 04:00 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 04:15 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 04:30 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 04:45 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 05:00 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 05:15 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 05:30 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 05:45 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Grand Total | 0                        | 1    | 3                        | 0     | 4                        | 14    | 22         |
| Apprch %    | 0                        | 100  | 100                      | 0     | 22.2                     | 77.8  |            |
| Total %     | 0                        | 4.5  | 13.6                     | 0     | 18.2                     | 63.6  |            |

|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                          |      |            |                          |       |            |                          |       |            |            |
| 02:15 PM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 1                        | 0     | 1          | 2          |
| 02:30 PM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 1                        | 7     | 8          | 8          |
| 02:45 PM                                                   | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 3     | 3          | 4          |
| 03:00 PM                                                   | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 3     | 3          | 4          |
| Total Volume                                               | 0                        | 1    | 1          | 2                        | 0     | 2          | 2                        | 13    | 15         | 18         |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 13.3                     | 86.7  |            |            |
| PHF                                                        | .000                     | .250 | .250       | .500                     | .000  | .500       | .500                     | .464  | .469       | .563       |

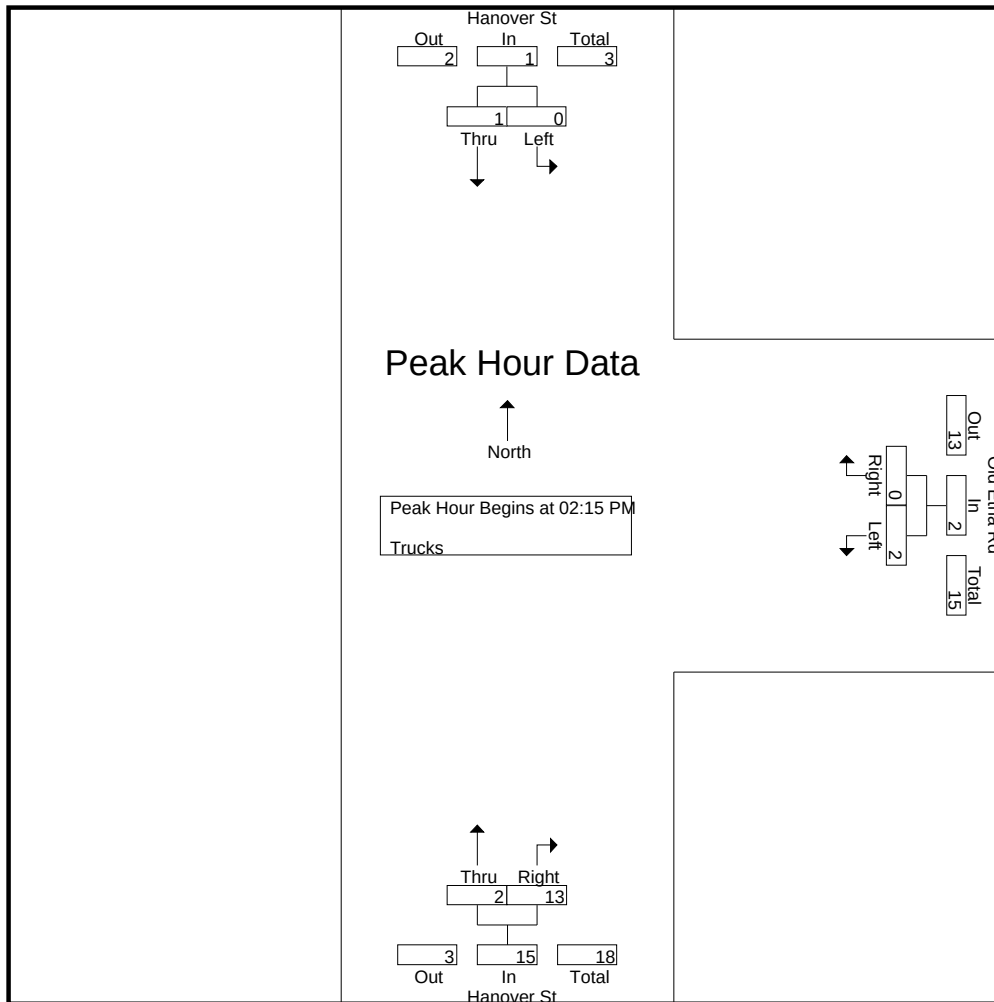


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 8

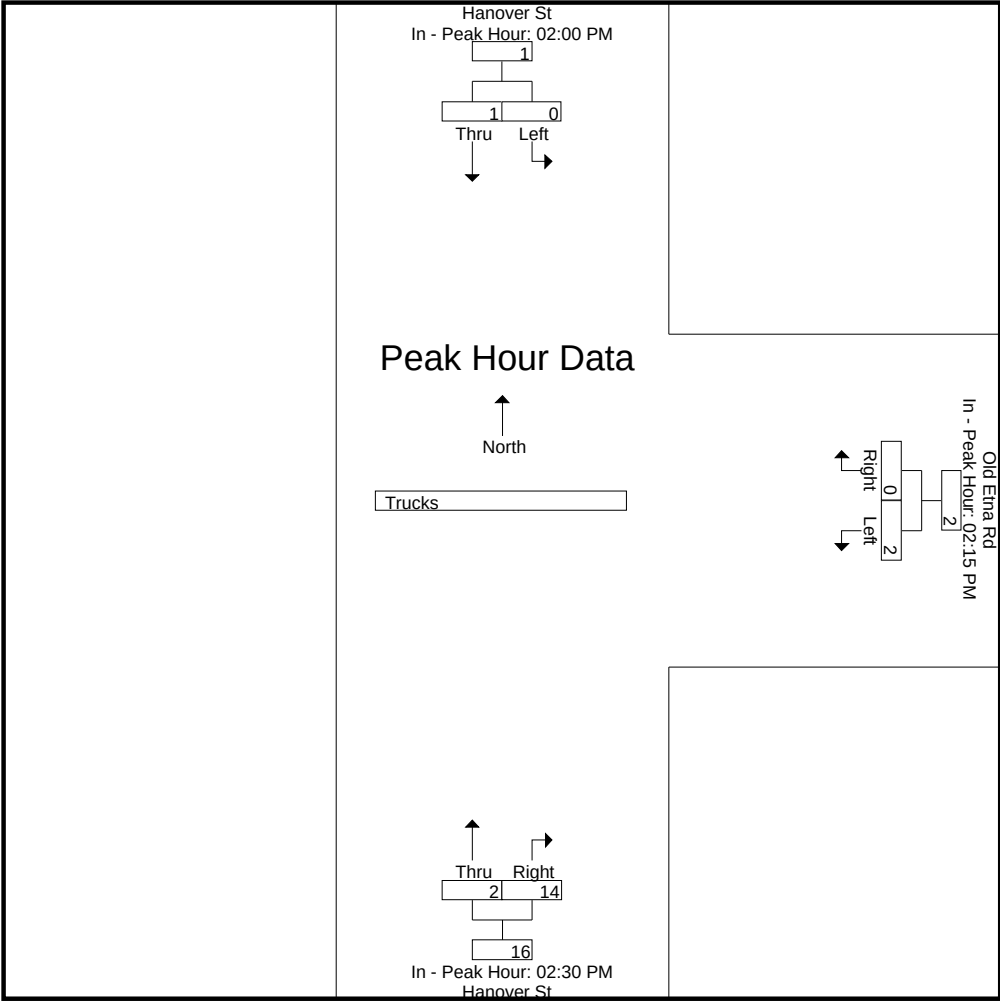


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:15 PM |      |      | 02:30 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 7    | 8    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 0        | 3    | 3    |
| +30 mins.    | 0        | 0    | 0    | 1        | 0    | 1    | 0        | 3    | 3    |
| +45 mins.    | 0        | 0    | 0    | 1        | 0    | 1    | 1        | 1    | 2    |
| Total Volume | 0        | 1    | 1    | 2        | 0    | 2    | 2        | 14   | 16   |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 12.5     | 87.5 |      |
| PHF          | .000     | .250 | .250 | .500     | .000 | .500 | .500     | .500 | .500 |

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Old Etna Rd<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|--------------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                     | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 02:00 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 1    | 1            | 0            | 1          |
| 02:15 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 1    | 1            | 0            | 1          |
| 02:30 PM    | 0                        | 0    | 0    | 3                        | 0     | 0    | 0                        | 0     | 0    | 0            | 3            | 3          |
| 02:45 PM    | 0                        | 0    | 0    | 1                        | 0     | 0    | 0                        | 0     | 0    | 0            | 1            | 1          |
| Total       | 0                        | 0    | 0    | 4                        | 0     | 0    | 0                        | 0     | 2    | 2            | 4            | 6          |
| 03:00 PM    | 0                        | 1    | 0    | 0                        | 0     | 1    | 0                        | 0     | 0    | 1            | 1            | 2          |
| 03:15 PM    | 0                        | 0    | 0    | 0                        | 0     | 1    | 0                        | 1     | 3    | 4            | 1            | 5          |
| 03:30 PM    | 0                        | 0    | 0    | 0                        | 0     | 2    | 0                        | 0     | 1    | 3            | 0            | 3          |
| 03:45 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                        | 1    | 0    | 0                        | 0     | 4    | 0                        | 1     | 4    | 8            | 2            | 10         |
| 04:00 PM    | 0                        | 1    | 0    | 0                        | 0     | 0    | 1                        | 0     | 1    | 1            | 2            | 3          |
| 04:15 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 04:30 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 04:45 PM    | 1                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 1            | 1          |
| Total       | 1                        | 1    | 0    | 0                        | 0     | 0    | 1                        | 0     | 1    | 1            | 3            | 4          |
| 05:00 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 05:15 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 05:30 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 05:45 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Grand Total | 1                        | 2    | 0    | 4                        | 0     | 4    | 1                        | 1     | 7    | 11           | 9            | 20         |
| Apprch %    | 33.3                     | 66.7 |      | 100                      | 0     |      | 50                       | 50    |      |              |              |            |
| Total %     | 11.1                     | 22.2 |      | 44.4                     | 0     |      | 11.1                     | 11.1  |      | 55           | 45           |            |

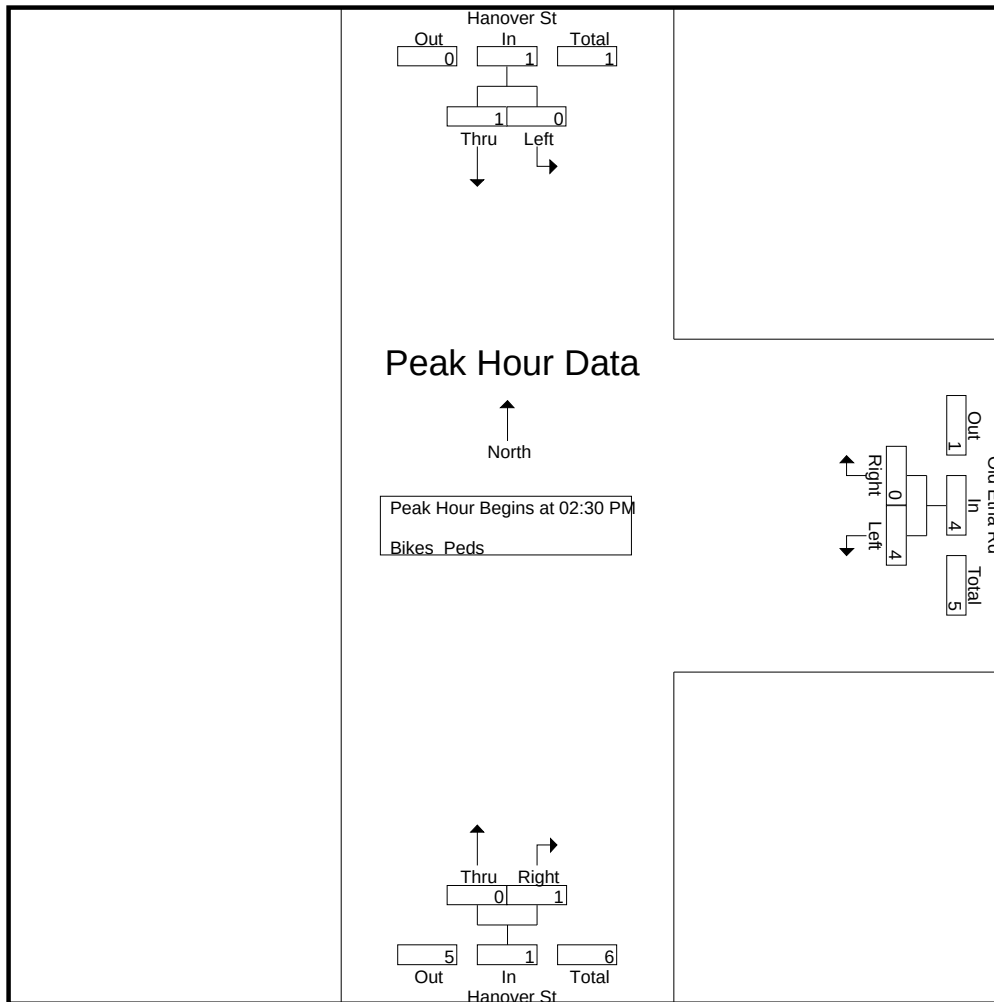
|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:30 PM       |                          |      |            |                          |       |            |                          |       |            |            |
| 02:30 PM                                                   | 0                        | 0    | 0          | 3                        | 0     | 3          | 0                        | 0     | 0          | 3          |
| 02:45 PM                                                   | 0                        | 0    | 0          | 1                        | 0     | 1          | 0                        | 0     | 0          | 1          |
| 03:00 PM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 0                        | 0     | 0          | 1          |
| 03:15 PM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 1     | 1          | 1          |
| Total Volume                                               | 0                        | 1    | 1          | 4                        | 0     | 4          | 0                        | 1     | 1          | 6          |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 0                        | 100   |            |            |
| PHF                                                        | .000                     | .250 | .250       | .333                     | .000  | .333       | .000                     | .250  | .250       | .500       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933002  
 Site Code : 52933002  
 Start Date : 11/10/2022  
 Page No : 11



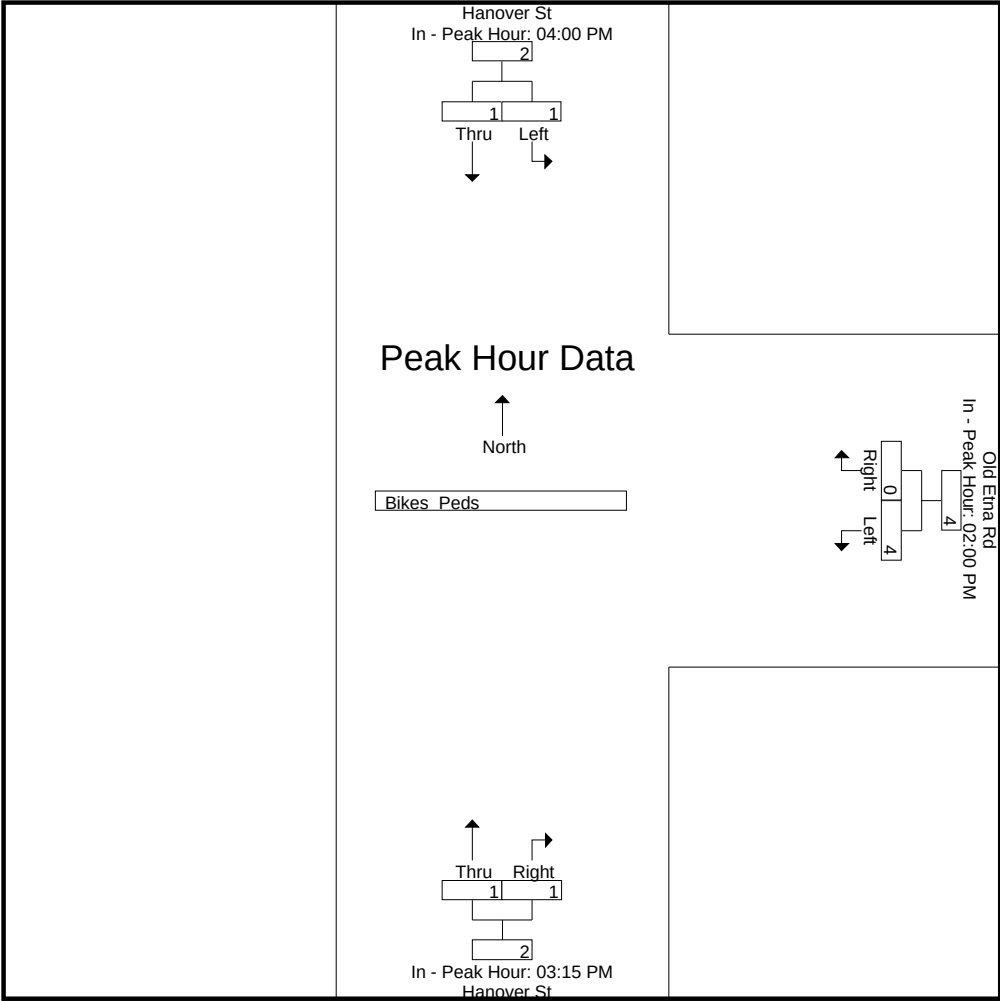
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 04:00 PM |      |      | 02:00 PM |      |      | 03:15 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 1    | 1    | 0        | 0    | 0    | 0        | 1    | 1    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 3        | 0    | 3    | 0        | 0    | 0    |
| +45 mins.    | 1        | 0    | 1    | 1        | 0    | 1    | 1        | 0    | 1    |
| Total Volume | 1        | 1    | 2    | 4        | 0    | 4    | 1        | 1    | 2    |
| % App. Total | 50       | 50   |      | 100      | 0    |      | 50       | 50   |      |
| PHF          | .250     | .250 | .500 | .333     | .000 | .333 | .250     | .250 | .500 |



N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933002  
Site Code : 52933002  
Start Date : 11/10/2022  
Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 11:00 AM    | 0                        | 1    | 0                        | 0     | 1                        | 5     | 7          |
| 11:15 AM    | 0                        | 2    | 2                        | 0     | 3                        | 5     | 12         |
| 11:30 AM    | 0                        | 2    | 1                        | 0     | 4                        | 1     | 8          |
| 11:45 AM    | 0                        | 6    | 2                        | 0     | 3                        | 2     | 13         |
| Total       | 0                        | 11   | 5                        | 0     | 11                       | 13    | 40         |
| 12:00 PM    | 0                        | 4    | 0                        | 0     | 3                        | 2     | 9          |
| 12:15 PM    | 0                        | 4    | 0                        | 1     | 3                        | 1     | 9          |
| 12:30 PM    | 0                        | 1    | 1                        | 0     | 6                        | 2     | 10         |
| 12:45 PM    | 0                        | 3    | 0                        | 0     | 2                        | 1     | 6          |
| Total       | 0                        | 12   | 1                        | 1     | 14                       | 6     | 34         |
| Grand Total | 0                        | 23   | 6                        | 1     | 25                       | 19    | 74         |
| Apprch %    | 0                        | 100  | 85.7                     | 14.3  | 56.8                     | 43.2  |            |
| Total %     | 0                        | 31.1 | 8.1                      | 1.4   | 33.8                     | 25.7  |            |
| Cars        | 0                        | 23   | 6                        | 1     | 25                       | 19    | 74         |
| % Cars      | 0                        | 100  | 100                      | 100   | 100                      | 100   | 100        |
| Trucks      | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| % Trucks    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |

|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 11:15 AM                                                   | 0                        | 2    | 2          | 2                        | 0     | 2          | 3                        | 5     | 8          | 12         |
| 11:30 AM                                                   | 0                        | 2    | 2          | 1                        | 0     | 1          | 4                        | 1     | 5          | 8          |
| 11:45 AM                                                   | 0                        | 6    | 6          | 2                        | 0     | 2          | 3                        | 2     | 5          | 13         |
| 12:00 PM                                                   | 0                        | 4    | 4          | 0                        | 0     | 0          | 3                        | 2     | 5          | 9          |
| Total Volume                                               | 0                        | 14   | 14         | 5                        | 0     | 5          | 13                       | 10    | 23         | 42         |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 56.5                     | 43.5  |            |            |
| PHF                                                        | .000                     | .583 | .583       | .625                     | .000  | .625       | .813                     | .500  | .719       | .808       |
| Cars                                                       | 0                        | 14   | 14         | 5                        | 0     | 5          | 13                       | 10    | 23         | 42         |
| % Cars                                                     | 0                        | 100  | 100        | 100                      | 0     | 100        | 100                      | 100   | 100        | 100        |
| Trucks                                                     | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| % Trucks                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |

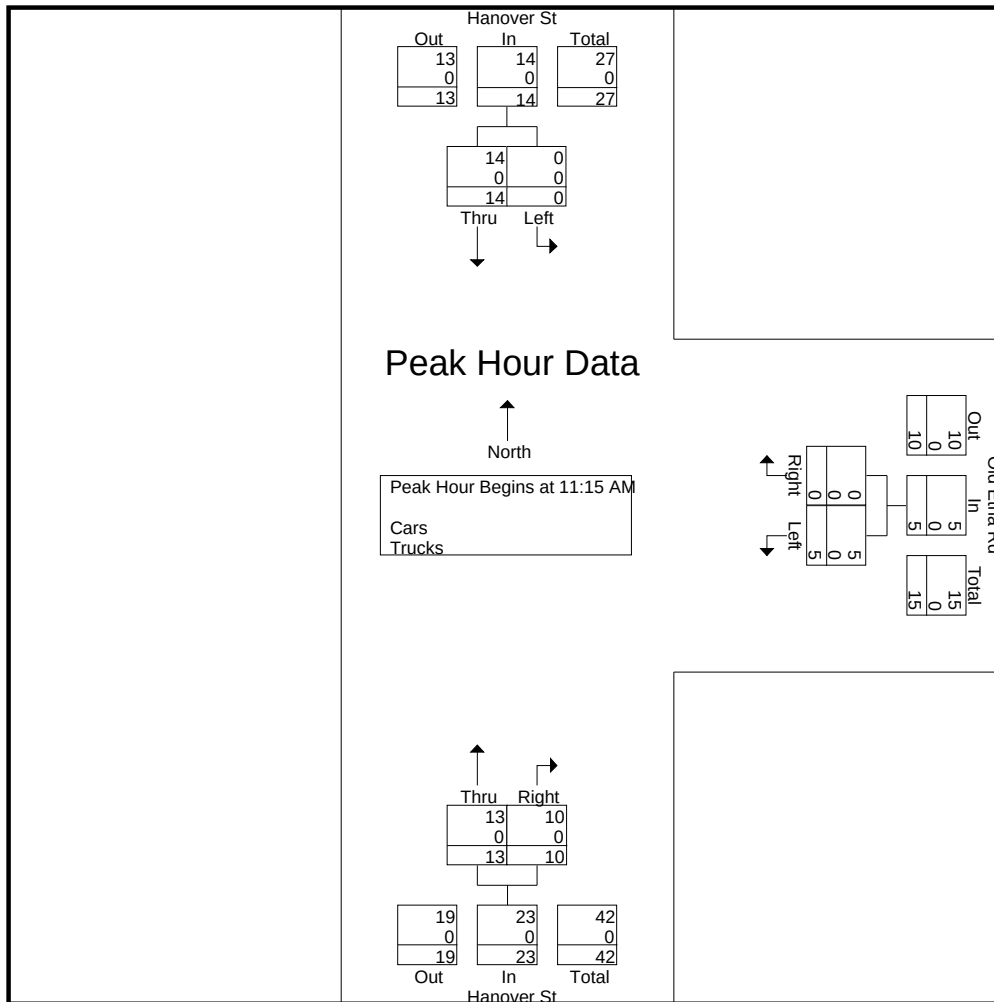


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

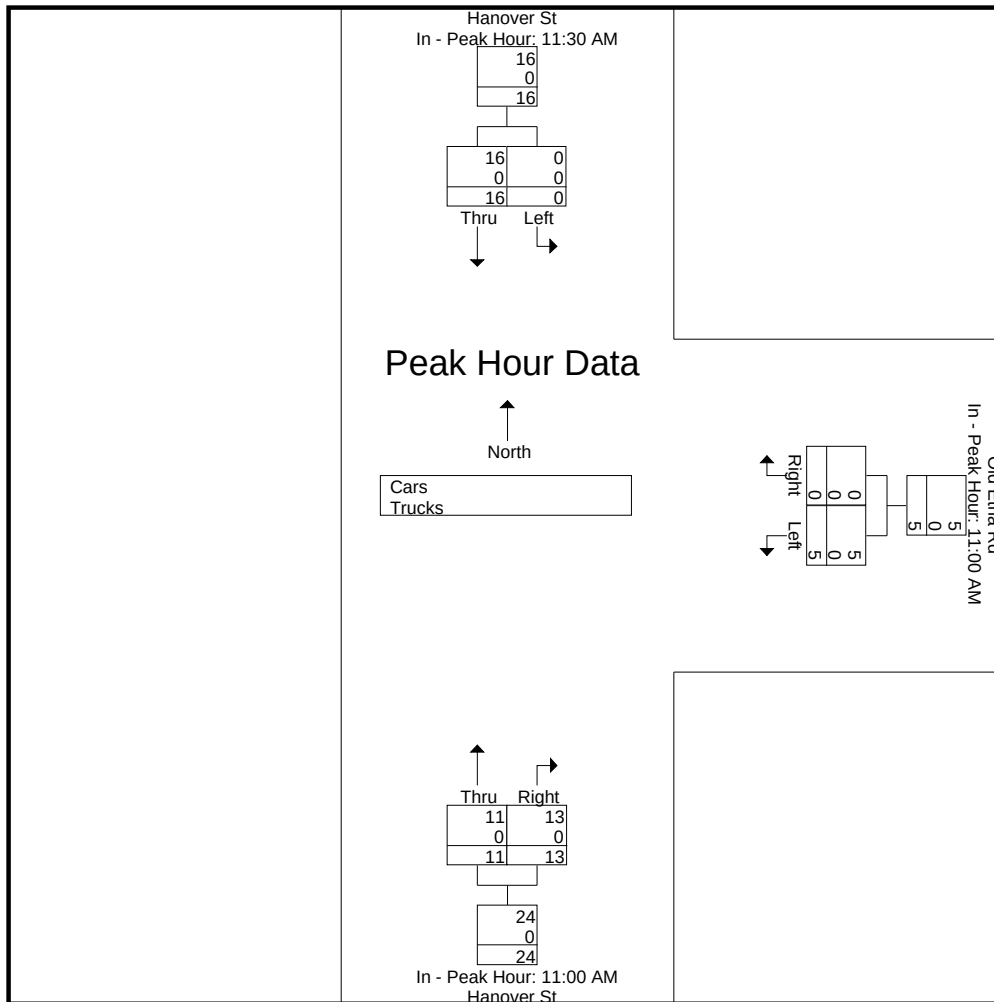
|              | 11:30 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 2    | 2    | 0        | 0    | 0    | 1        | 5    | 6    |
| +15 mins.    | 0        | 6    | 6    | 2        | 0    | 2    | 3        | 5    | 8    |
| +30 mins.    | 0        | 4    | 4    | 1        | 0    | 1    | 4        | 1    | 5    |
| +45 mins.    | 0        | 4    | 4    | 2        | 0    | 2    | 3        | 2    | 5    |
| Total Volume | 0        | 16   | 16   | 5        | 0    | 5    | 11       | 13   | 24   |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 45.8     | 54.2 |      |
| PHF          | .000     | .667 | .667 | .625     | .000 | .625 | .688     | .650 | .750 |
| Cars         | 0        | 16   | 16   | 5        | 0    | 5    | 11       | 13   | 24   |
| % Cars       | 0        | 100  | 100  | 100      | 0    | 100  | 100      | 100  | 100  |
| Trucks       | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % Trucks     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 3





**Accurate Counts**  
978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 4

**Groups Printed- Cars**

|             | <b>Hanover St<br/>From North</b> |      | <b>Old Etna Rd<br/>From East</b> |       | <b>Hanover St<br/>From South</b> |       |            |
|-------------|----------------------------------|------|----------------------------------|-------|----------------------------------|-------|------------|
| Start Time  | Left                             | Thru | Left                             | Right | Thru                             | Right | Int. Total |
| 11:00 AM    | 0                                | 1    | 0                                | 0     | 1                                | 5     | 7          |
| 11:15 AM    | 0                                | 2    | 2                                | 0     | 3                                | 5     | 12         |
| 11:30 AM    | 0                                | 2    | 1                                | 0     | 4                                | 1     | 8          |
| 11:45 AM    | 0                                | 6    | 2                                | 0     | 3                                | 2     | 13         |
| Total       | 0                                | 11   | 5                                | 0     | 11                               | 13    | 40         |
| 12:00 PM    | 0                                | 4    | 0                                | 0     | 3                                | 2     | 9          |
| 12:15 PM    | 0                                | 4    | 0                                | 1     | 3                                | 1     | 9          |
| 12:30 PM    | 0                                | 1    | 1                                | 0     | 6                                | 2     | 10         |
| 12:45 PM    | 0                                | 3    | 0                                | 0     | 2                                | 1     | 6          |
| Total       | 0                                | 12   | 1                                | 1     | 14                               | 6     | 34         |
| Grand Total | 0                                | 23   | 6                                | 1     | 25                               | 19    | 74         |
| Apprch %    | 0                                | 100  | 85.7                             | 14.3  | 56.8                             | 43.2  |            |
| Total %     | 0                                | 31.1 | 8.1                              | 1.4   | 33.8                             | 25.7  |            |

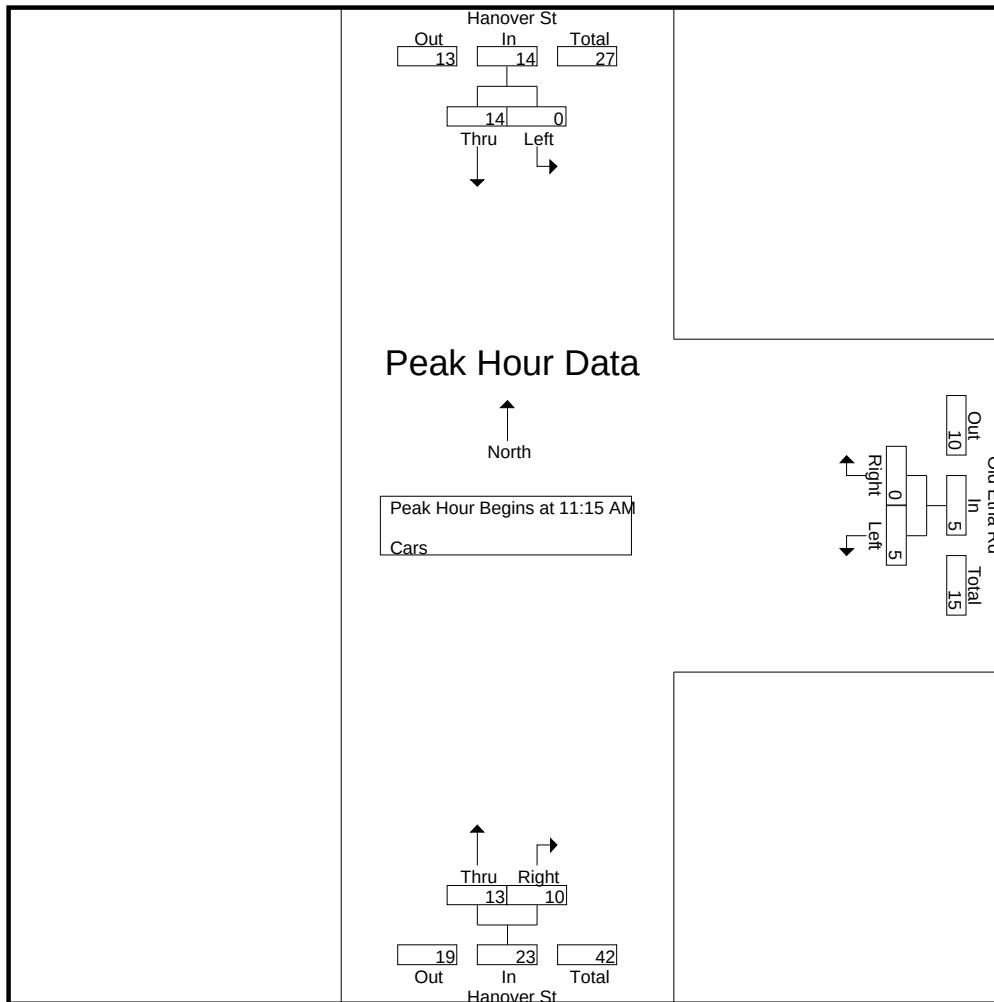
|                                                            | <b>Hanover St<br/>From North</b> |      |            | <b>Old Etna Rd<br/>From East</b> |       |            | <b>Hanover St<br/>From South</b> |       |            |            |
|------------------------------------------------------------|----------------------------------|------|------------|----------------------------------|-------|------------|----------------------------------|-------|------------|------------|
| Start Time                                                 | Left                             | Thru | App. Total | Left                             | Right | App. Total | Thru                             | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                  |      |            |                                  |       |            |                                  |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                                  |      |            |                                  |       |            |                                  |       |            |            |
| 11:15 AM                                                   | 0                                | 2    | 2          | 2                                | 0     | 2          | 3                                | 5     | 8          | 12         |
| 11:30 AM                                                   | 0                                | 2    | 2          | 1                                | 0     | 1          | 4                                | 1     | 5          | 8          |
| 11:45 AM                                                   | 0                                | 6    | 6          | 2                                | 0     | 2          | 3                                | 2     | 5          | 13         |
| 12:00 PM                                                   | 0                                | 4    | 4          | 0                                | 0     | 0          | 3                                | 2     | 5          | 9          |
| Total Volume                                               | 0                                | 14   | 14         | 5                                | 0     | 5          | 13                               | 10    | 23         | 42         |
| % App. Total                                               | 0                                | 100  |            | 100                              | 0     |            | 56.5                             | 43.5  |            |            |
| PHF                                                        | .000                             | .583 | .583       | .625                             | .000  | .625       | .813                             | .500  | .719       | .808       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 5



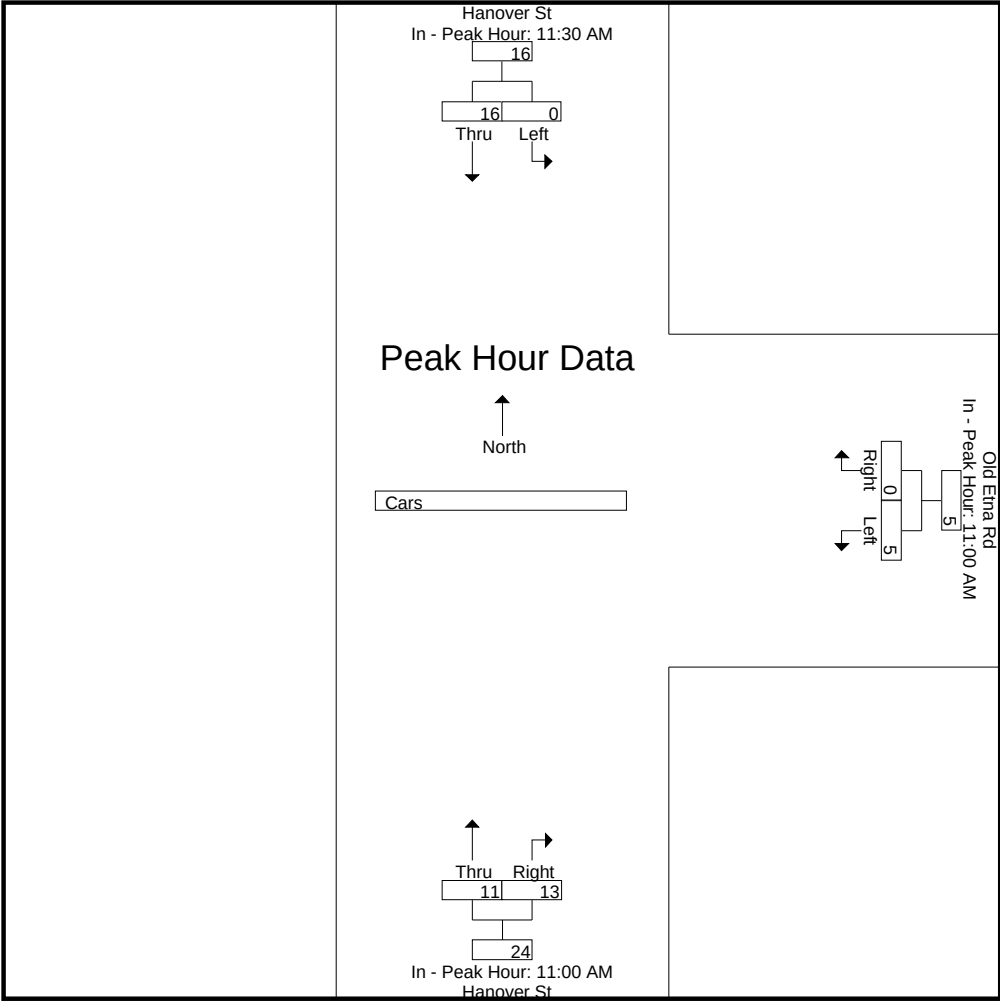
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:30 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 2    | 2    | 0        | 0    | 0    | 1        | 5    | 6    |
| +15 mins.    | 0        | 6    | 6    | 2        | 0    | 2    | 3        | 5    | 8    |
| +30 mins.    | 0        | 4    | 4    | 1        | 0    | 1    | 4        | 1    | 5    |
| +45 mins.    | 0        | 4    | 4    | 2        | 0    | 2    | 3        | 2    | 5    |
| Total Volume | 0        | 16   | 16   | 5        | 0    | 5    | 11       | 13   | 24   |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 45.8     | 54.2 |      |
| PHF          | .000     | .667 | .667 | .625     | .000 | .625 | .688     | .650 | .750 |



N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 7

## Groups Printed- Trucks

|             | Hanover St<br>From North |      | Old Etna Rd<br>From East |       | Hanover St<br>From South |       |            |
|-------------|--------------------------|------|--------------------------|-------|--------------------------|-------|------------|
| Start Time  | Left                     | Thru | Left                     | Right | Thru                     | Right | Int. Total |
| 11:00 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 11:15 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 11:30 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 11:45 AM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 12:00 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 12:15 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 12:30 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| 12:45 PM    | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Total       | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Grand Total | 0                        | 0    | 0                        | 0     | 0                        | 0     | 0          |
| Apprch %    | 0                        | 0    | 0                        | 0     | 0                        | 0     |            |
| Total %     |                          |      |                          |       |                          |       |            |

|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            |            |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 11:00 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| Total Volume                                               | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| % App. Total                                               | 0                        | 0    |            | 0                        | 0     |            | 0                        | 0     |            |            |
| PHF                                                        | .000                     | .000 | .000       | .000                     | .000  | .000       | .000                     | .000  | .000       | .000       |

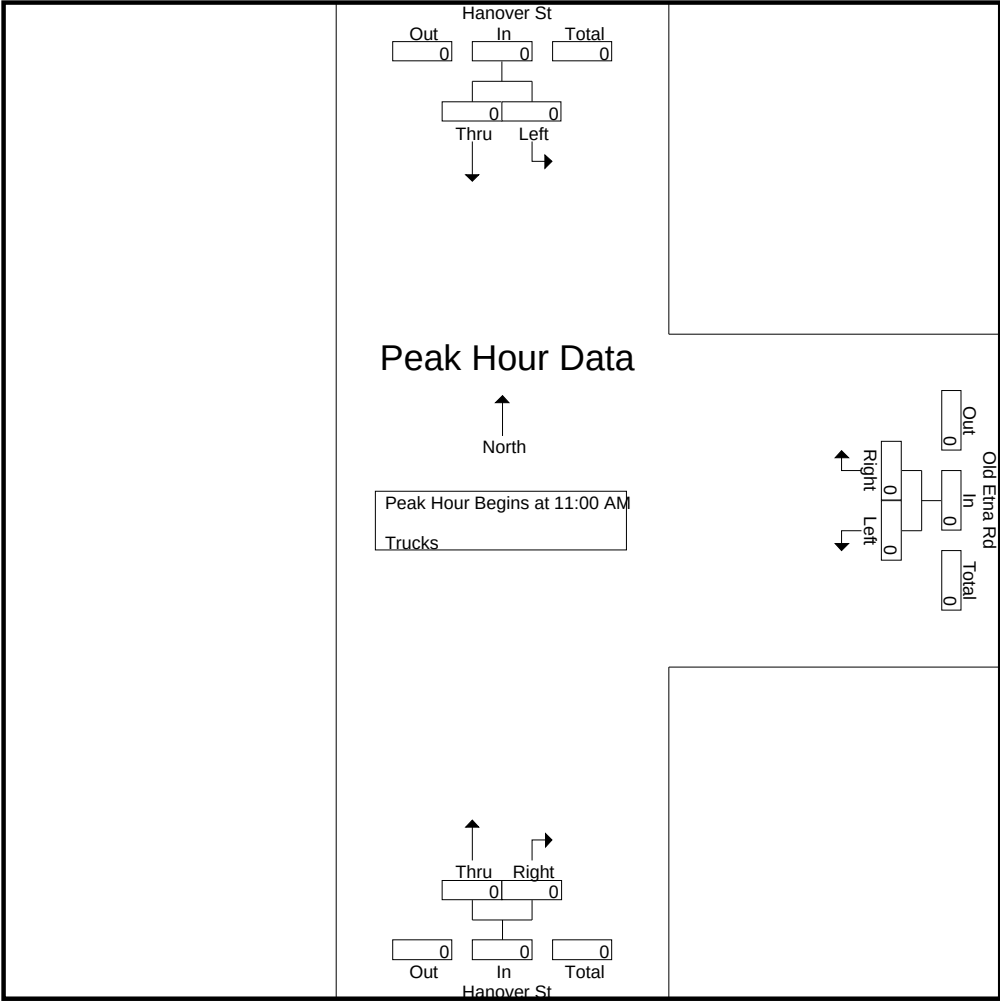


# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 8

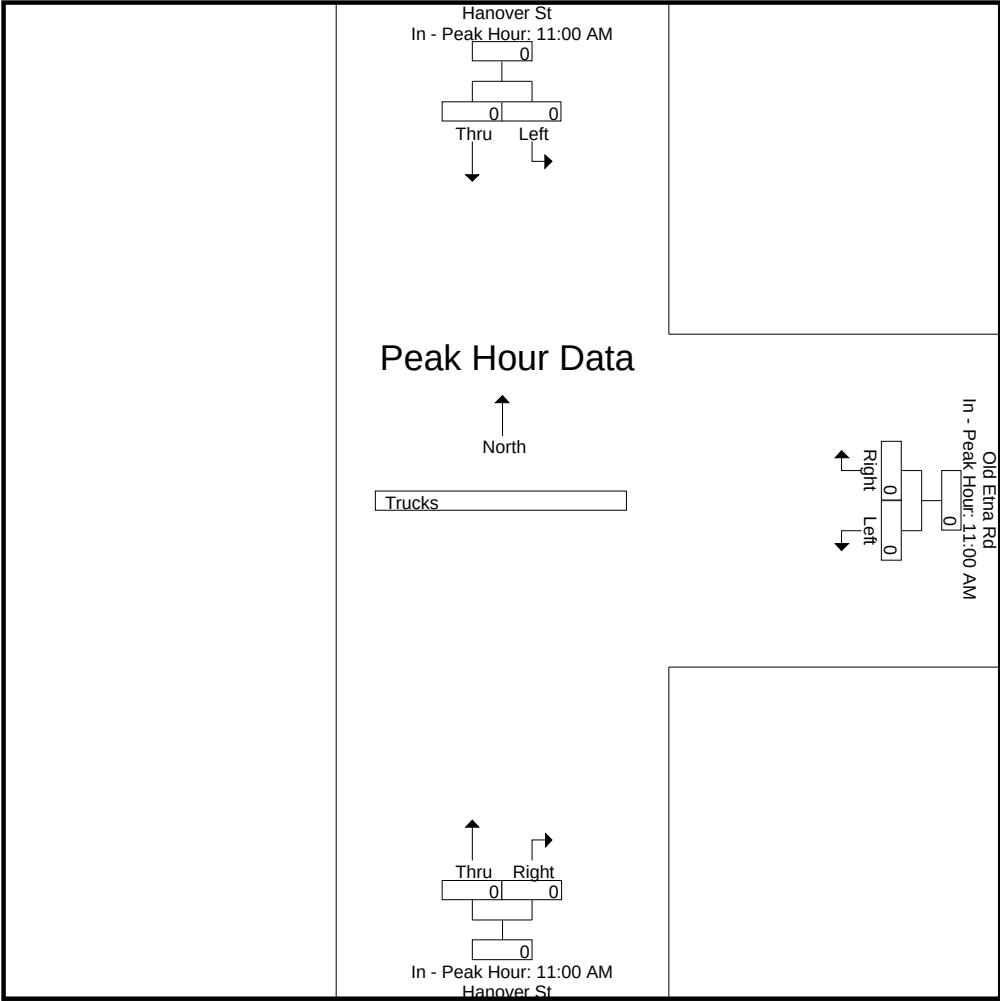


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 0    |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .000 | .000 | .000     | .000 | .000 |

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Hanover St<br>From North |      |      | Old Etna Rd<br>From East |       |      | Hanover St<br>From South |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------|------|------|--------------------------|-------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Left                     | Thru | Peds | Left                     | Right | Peds | Thru                     | Right | Peds |              |              |            |
| 11:00 AM    | 0                        | 0    | 0    | 2                        | 0     | 0    | 0                        | 0     | 0    | 0            | 2            | 2          |
| 11:15 AM    | 0                        | 1    | 0    | 0                        | 0     | 2    | 0                        | 0     | 0    | 2            | 1            | 3          |
| 11:30 AM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 11:45 AM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                        | 1    | 0    | 2                        | 0     | 2    | 0                        | 0     | 0    | 2            | 3            | 5          |
| 12:00 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 1                        | 0     | 0    | 0            | 1            | 1          |
| 12:15 PM    | 0                        | 0    | 0    | 1                        | 0     | 0    | 0                        | 1     | 0    | 0            | 2            | 2          |
| 12:30 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 1    | 1            | 0            | 1          |
| 12:45 PM    | 0                        | 0    | 0    | 0                        | 0     | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                        | 0    | 0    | 1                        | 0     | 0    | 1                        | 1     | 1    | 1            | 3            | 4          |
| Grand Total | 0                        | 1    | 0    | 3                        | 0     | 2    | 1                        | 1     | 1    | 3            | 6            | 9          |
| Apprch %    | 0                        | 100  |      | 100                      | 0     |      | 50                       | 50    |      |              |              |            |
| Total %     | 0                        | 16.7 |      | 50                       | 0     |      | 16.7                     | 16.7  |      | 33.3         | 66.7         |            |

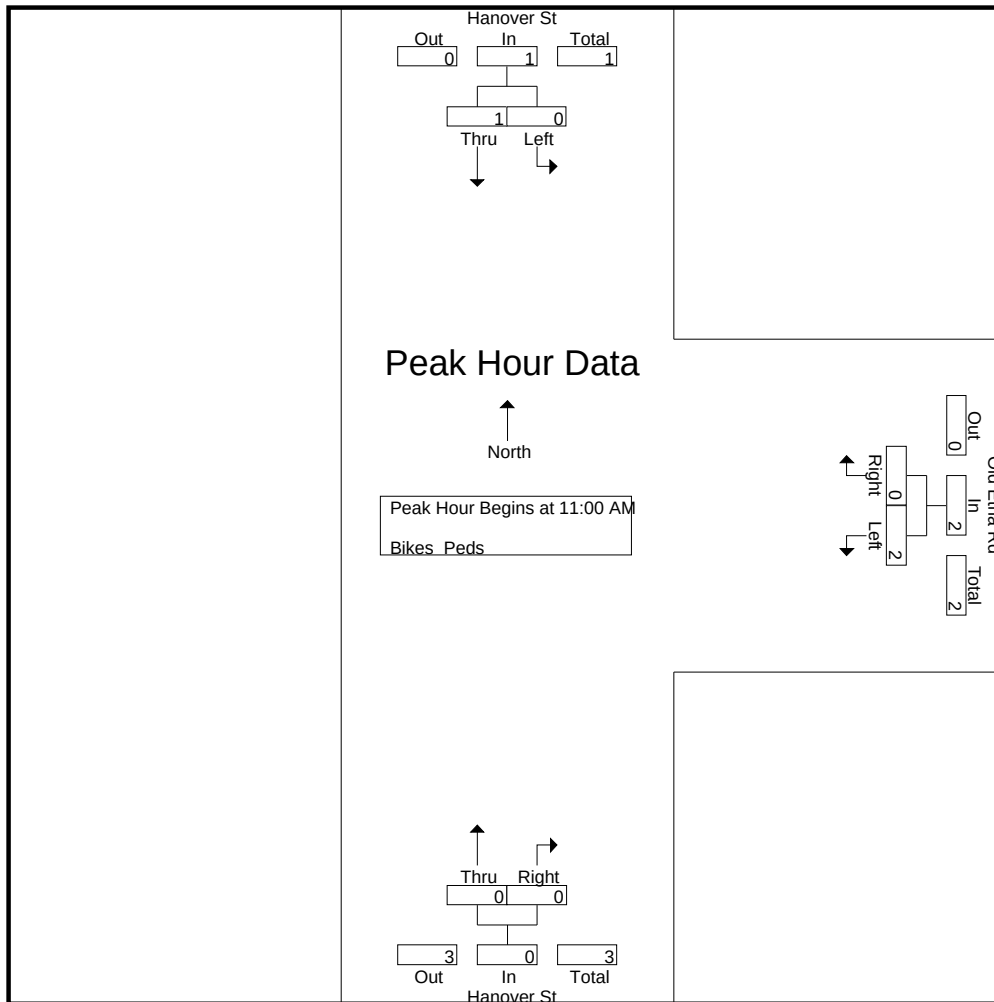
|                                                            | Hanover St<br>From North |      |            | Old Etna Rd<br>From East |       |            | Hanover St<br>From South |       |            | Int. Total |
|------------------------------------------------------------|--------------------------|------|------------|--------------------------|-------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Left                     | Thru | App. Total | Left                     | Right | App. Total | Thru                     | Right | App. Total |            |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                          |      |            |                          |       |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                          |      |            |                          |       |            |                          |       |            |            |
| 11:00 AM                                                   | 0                        | 0    | 0          | 2                        | 0     | 2          | 0                        | 0     | 0          | 2          |
| 11:15 AM                                                   | 0                        | 1    | 1          | 0                        | 0     | 0          | 0                        | 0     | 0          | 1          |
| 11:30 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                        | 0    | 0          | 0                        | 0     | 0          | 0                        | 0     | 0          | 0          |
| Total Volume                                               | 0                        | 1    | 1          | 2                        | 0     | 2          | 0                        | 0     | 0          | 3          |
| % App. Total                                               | 0                        | 100  |            | 100                      | 0     |            | 0                        | 0     |            |            |
| PHF                                                        | .000                     | .250 | .250       | .250                     | .000  | .250       | .000                     | .000  | .000       | .375       |

# Accurate Counts

978-664-2565

N/S Street : Hanover Street  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S2  
 Site Code : 52933002  
 Start Date : 11/12/2022  
 Page No : 11



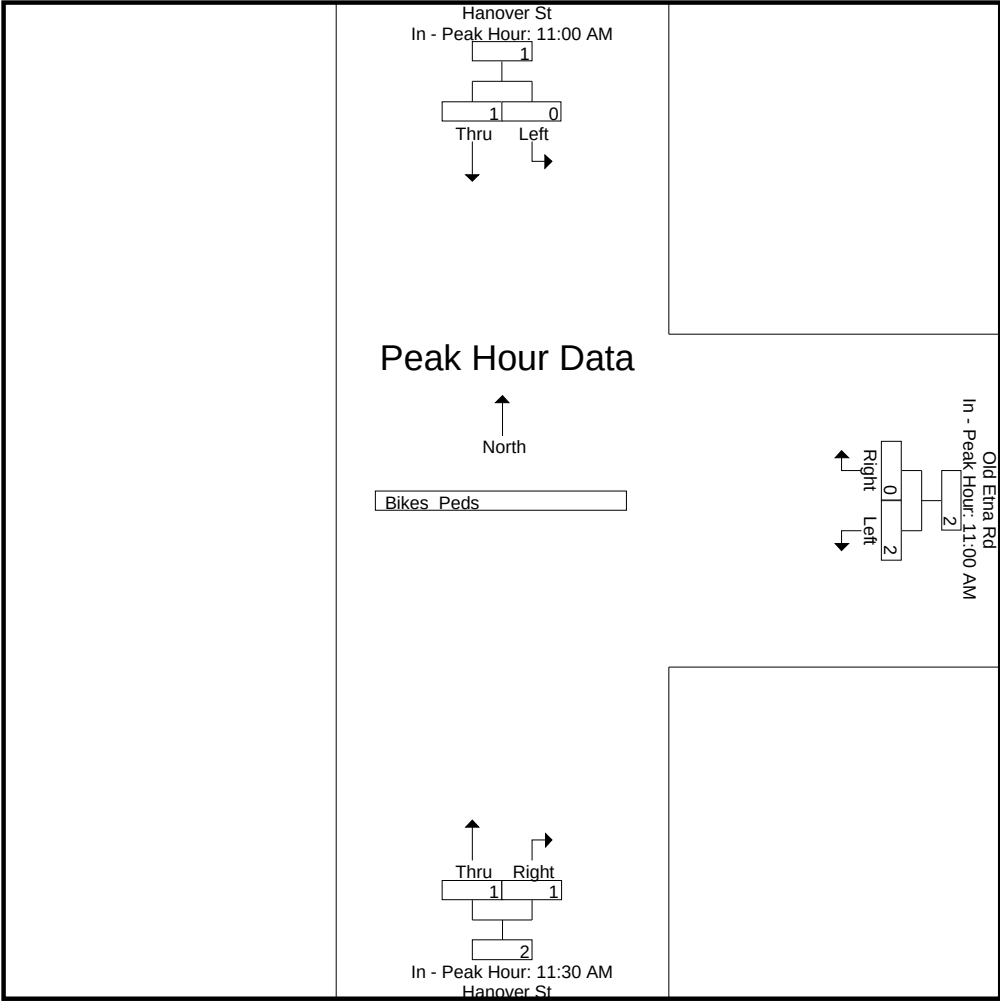
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:30 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 2        | 0    | 2    | 0        | 0    | 0    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 0    | 1    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 1    | 1    |
| Total Volume | 0        | 1    | 1    | 2        | 0    | 2    | 1        | 1    | 2    |
| % App. Total | 0        | 100  |      | 100      | 0    |      | 50       | 50   |      |
| PHF          | .000     | .250 | .250 | .250     | .000 | .250 | .250     | .250 | .500 |



N/S Street : Hanover Street  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S2  
Site Code : 52933002  
Start Date : 11/12/2022  
Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Mount Support Rd<br>From North |       |  | Heater Rd<br>From South |      |  | Hanover St<br>From West |       |  |            |
|-------------|--------------------------------|-------|--|-------------------------|------|--|-------------------------|-------|--|------------|
| Start Time  | Thru                           | Right |  | Left                    | Thru |  | Left                    | Right |  | Int. Total |
| 07:00 AM    | 14                             | 1     |  | 1                       | 25   |  | 7                       | 0     |  | 48         |
| 07:15 AM    | 23                             | 5     |  | 1                       | 29   |  | 12                      | 0     |  | 70         |
| 07:30 AM    | 25                             | 5     |  | 0                       | 34   |  | 11                      | 1     |  | 76         |
| 07:45 AM    | 36                             | 2     |  | 0                       | 39   |  | 11                      | 2     |  | 90         |
| Total       | 98                             | 13    |  | 2                       | 127  |  | 41                      | 3     |  | 284        |
| 08:00 AM    | 15                             | 6     |  | 0                       | 31   |  | 11                      | 0     |  | 63         |
| 08:15 AM    | 21                             | 1     |  | 0                       | 21   |  | 8                       | 0     |  | 51         |
| 08:30 AM    | 18                             | 3     |  | 0                       | 20   |  | 1                       | 0     |  | 42         |
| 08:45 AM    | 18                             | 2     |  | 0                       | 21   |  | 2                       | 0     |  | 43         |
| Total       | 72                             | 12    |  | 0                       | 93   |  | 22                      | 0     |  | 199        |
| Grand Total | 170                            | 25    |  | 2                       | 220  |  | 63                      | 3     |  | 483        |
| Apprch %    | 87.2                           | 12.8  |  | 0.9                     | 99.1 |  | 95.5                    | 4.5   |  |            |
| Total %     | 35.2                           | 5.2   |  | 0.4                     | 45.5 |  | 13                      | 0.6   |  |            |
| Cars        | 159                            | 24    |  | 2                       | 209  |  | 61                      | 3     |  | 458        |
| % Cars      | 93.5                           | 96    |  | 100                     | 95   |  | 96.8                    | 100   |  | 94.8       |
| Trucks      | 11                             | 1     |  | 0                       | 11   |  | 2                       | 0     |  | 25         |
| % Trucks    | 6.5                            | 4     |  | 0                       | 5    |  | 3.2                     | 0     |  | 5.2        |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 07:15 AM                                                   | 23                             | 5     | 28         | 1                       | 29   | 30         | 12                      | 0     | 12         | 70         |
| 07:30 AM                                                   | 25                             | 5     | 30         | 0                       | 34   | 34         | 11                      | 1     | 12         | 76         |
| 07:45 AM                                                   | 36                             | 2     | 38         | 0                       | 39   | 39         | 11                      | 2     | 13         | 90         |
| 08:00 AM                                                   | 15                             | 6     | 21         | 0                       | 31   | 31         | 11                      | 0     | 11         | 63         |
| Total Volume                                               | 99                             | 18    | 117        | 1                       | 133  | 134        | 45                      | 3     | 48         | 299        |
| % App. Total                                               | 84.6                           | 15.4  |            | 0.7                     | 99.3 |            | 93.8                    | 6.2   |            |            |
| PHF                                                        | .688                           | .750  | .770       | .250                    | .853 | .859       | .938                    | .375  | .923       | .831       |
| Cars                                                       | 94                             | 18    | 112        | 1                       | 126  | 127        | 45                      | 3     | 48         | 287        |
| % Cars                                                     | 94.9                           | 100   | 95.7       | 100                     | 94.7 | 94.8       | 100                     | 100   | 100        | 96.0       |
| Trucks                                                     | 5                              | 0     | 5          | 0                       | 7    | 7          | 0                       | 0     | 0          | 12         |
| % Trucks                                                   | 5.1                            | 0     | 4.3        | 0                       | 5.3  | 5.2        | 0                       | 0     | 0          | 4.0        |

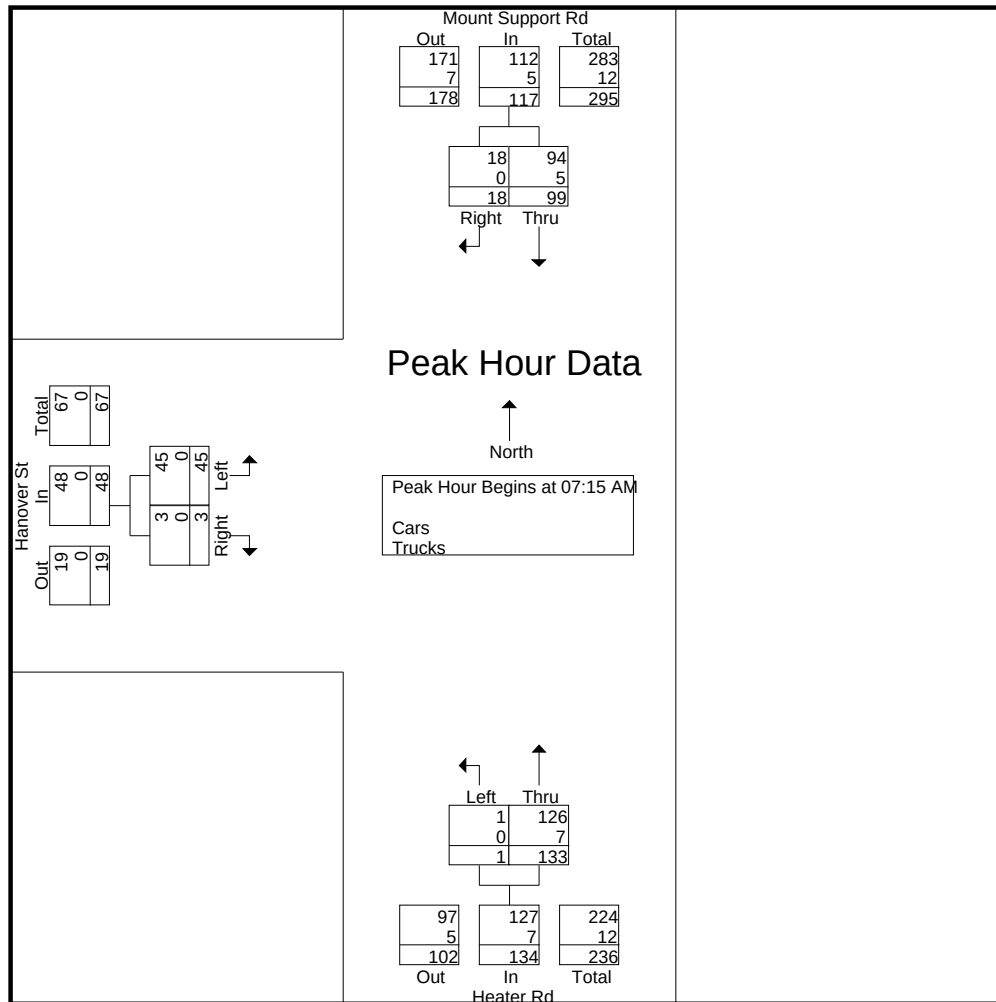


# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

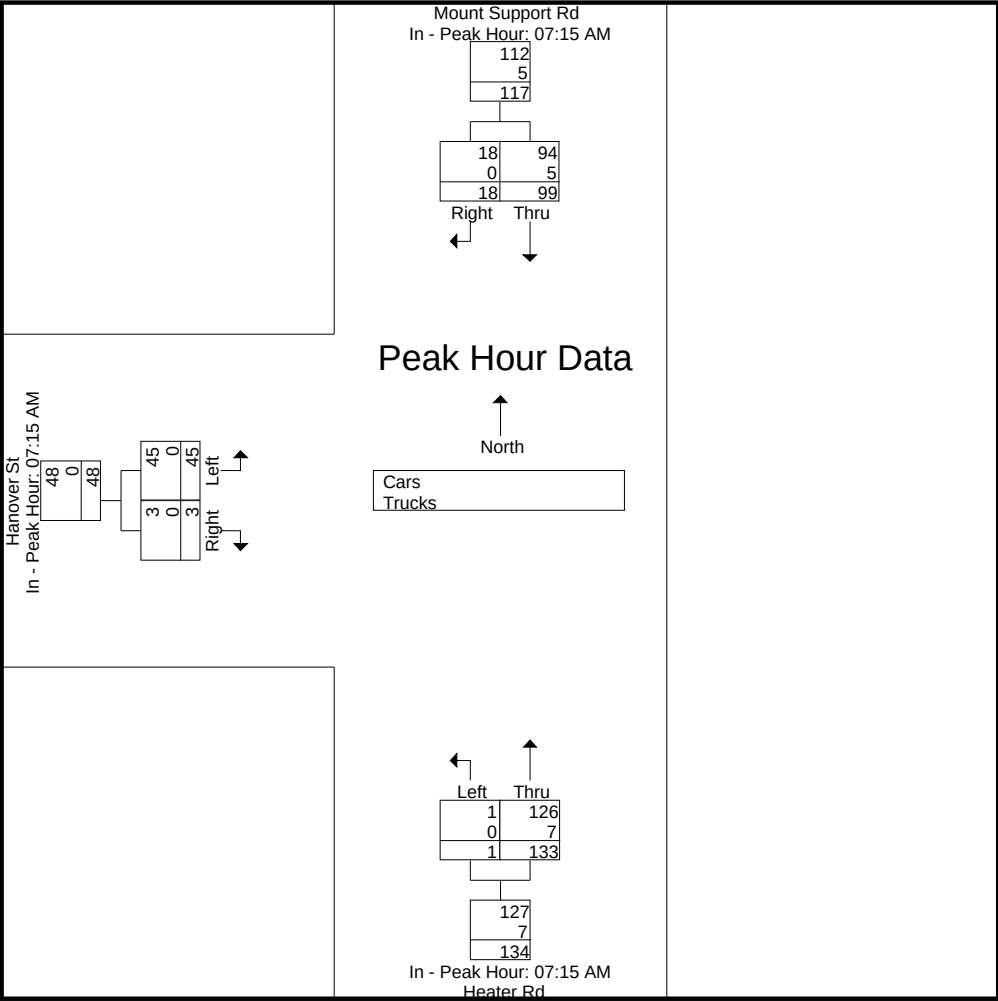
|              | 07:15 AM  |          |           | 07:15 AM |           |           | 07:15 AM  |          |           |
|--------------|-----------|----------|-----------|----------|-----------|-----------|-----------|----------|-----------|
| +0 mins.     | 23        | 5        | 28        | <b>1</b> | 29        | 30        | <b>12</b> | 0        | 12        |
| +15 mins.    | 25        | 5        | 30        | 0        | 34        | 34        | 11        | 1        | 12        |
| +30 mins.    | <b>36</b> | 2        | <b>38</b> | 0        | <b>39</b> | <b>39</b> | 11        | <b>2</b> | <b>13</b> |
| +45 mins.    | 15        | <b>6</b> | 21        | 0        | 31        | 31        | 11        | 0        | 11        |
| Total Volume | 99        | 18       | 117       | 1        | 133       | 134       | 45        | 3        | 48        |
| % App. Total | 84.6      | 15.4     |           | 0.7      | 99.3      |           | 93.8      | 6.2      |           |
| PHF          | .688      | .750     | .770      | .250     | .853      | .859      | .938      | .375     | .923      |
| Cars         | 94        | 18       | 112       | 1        | 126       | 127       | 45        | 3        | 48        |
| % Cars       | 94.9      | 100      | 95.7      | 100      | 94.7      | 94.8      | 100       | 100      | 100       |
| Trucks       | 5         | 0        | 5         | 0        | 7         | 7         | 0         | 0        | 0         |
| % Trucks     | 5.1       | 0        | 4.3       | 0        | 5.3       | 5.2       | 0         | 0        | 0         |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 4

## Groups Printed- Cars

|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 07:00 AM    | 13                             | 0     | 1                       | 24   | 6                       | 0     | 44         |
| 07:15 AM    | 22                             | 5     | 1                       | 27   | 12                      | 0     | 67         |
| 07:30 AM    | 24                             | 5     | 0                       | 33   | 11                      | 1     | 74         |
| 07:45 AM    | 33                             | 2     | 0                       | 36   | 11                      | 2     | 84         |
| Total       | 92                             | 12    | 2                       | 120  | 40                      | 3     | 269        |
| 08:00 AM    | 15                             | 6     | 0                       | 30   | 11                      | 0     | 62         |
| 08:15 AM    | 18                             | 1     | 0                       | 20   | 7                       | 0     | 46         |
| 08:30 AM    | 16                             | 3     | 0                       | 19   | 1                       | 0     | 39         |
| 08:45 AM    | 18                             | 2     | 0                       | 20   | 2                       | 0     | 42         |
| Total       | 67                             | 12    | 0                       | 89   | 21                      | 0     | 189        |
| Grand Total | 159                            | 24    | 2                       | 209  | 61                      | 3     | 458        |
| Apprch %    | 86.9                           | 13.1  | 0.9                     | 99.1 | 95.3                    | 4.7   |            |
| Total %     | 34.7                           | 5.2   | 0.4                     | 45.6 | 13.3                    | 0.7   |            |

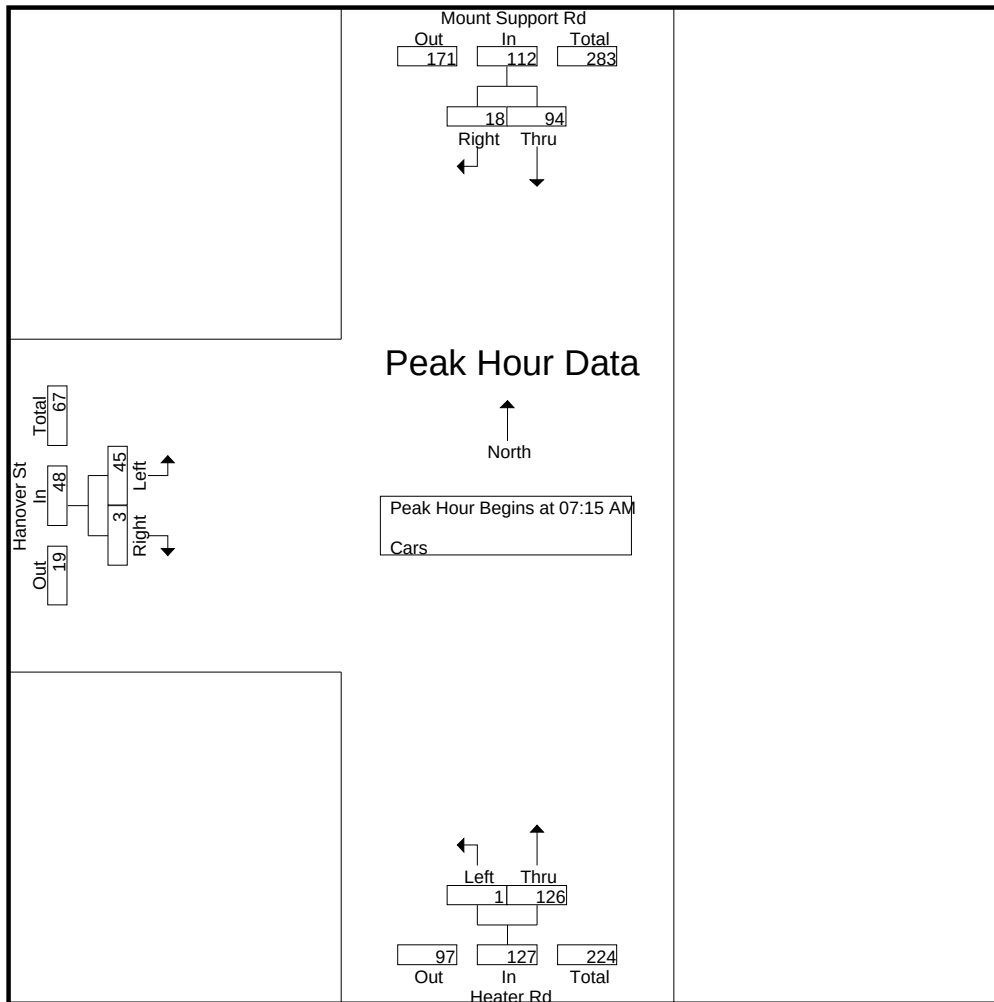
|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 07:15 AM                                                   | 22                             | 5     | 27         | 1                       | 27   | 28         | 12                      | 0     | 12         | 67         |
| 07:30 AM                                                   | 24                             | 5     | 29         | 0                       | 33   | 33         | 11                      | 1     | 12         | 74         |
| 07:45 AM                                                   | 33                             | 2     | 35         | 0                       | 36   | 36         | 11                      | 2     | 13         | 84         |
| 08:00 AM                                                   | 15                             | 6     | 21         | 0                       | 30   | 30         | 11                      | 0     | 11         | 62         |
| Total Volume                                               | 94                             | 18    | 112        | 1                       | 126  | 127        | 45                      | 3     | 48         | 287        |
| % App. Total                                               | 83.9                           | 16.1  |            | 0.8                     | 99.2 |            | 93.8                    | 6.2   |            |            |
| PHF                                                        | .712                           | .750  | .800       | .250                    | .875 | .882       | .938                    | .375  | .923       | .854       |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
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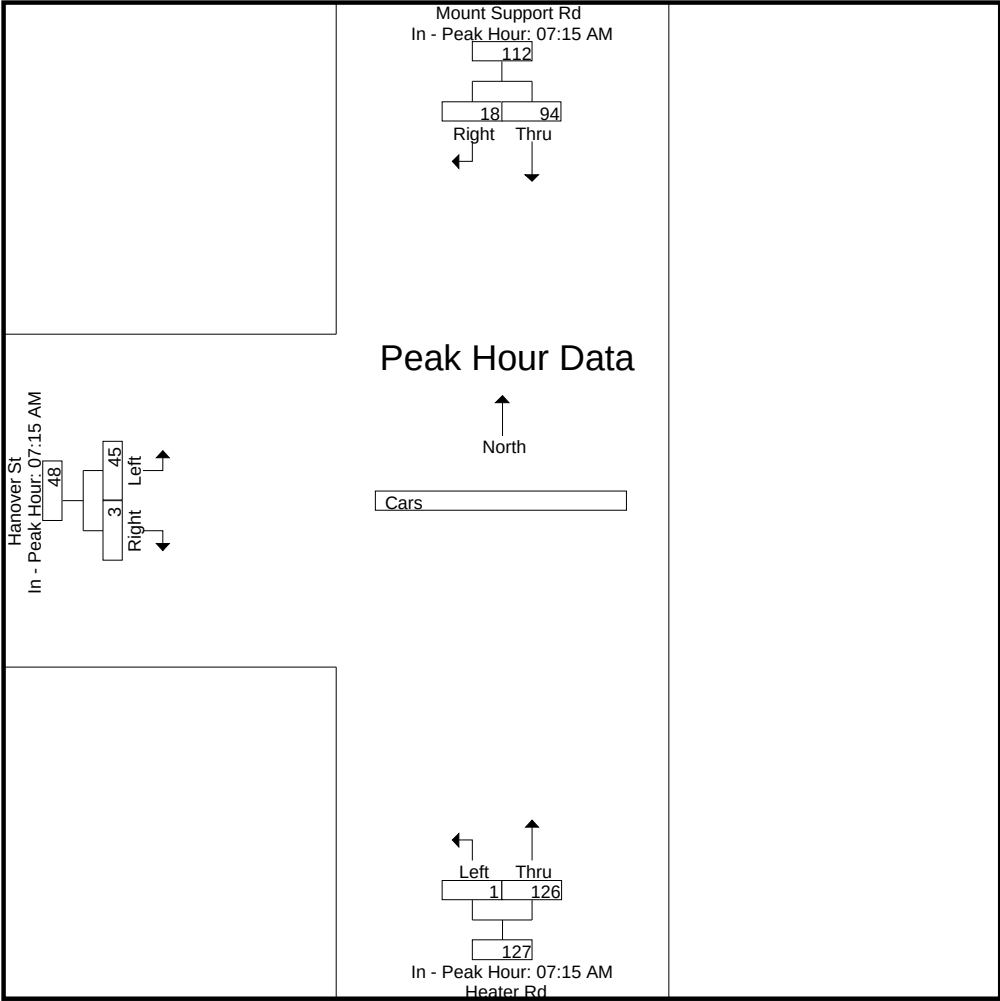
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:15 AM |      |      | 07:15 AM |      |      | 07:15 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 22       | 5    | 27   | 1        | 27   | 28   | 12       | 0    | 12   |
| +15 mins.    | 24       | 5    | 29   | 0        | 33   | 33   | 11       | 1    | 12   |
| +30 mins.    | 33       | 2    | 35   | 0        | 36   | 36   | 11       | 2    | 13   |
| +45 mins.    | 15       | 6    | 21   | 0        | 30   | 30   | 11       | 0    | 11   |
| Total Volume | 94       | 18   | 112  | 1        | 126  | 127  | 45       | 3    | 48   |
| % App. Total | 83.9     | 16.1 |      | 0.8      | 99.2 |      | 93.8     | 6.2  |      |
| PHF          | .712     | .750 | .800 | .250     | .875 | .882 | .938     | .375 | .923 |



N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

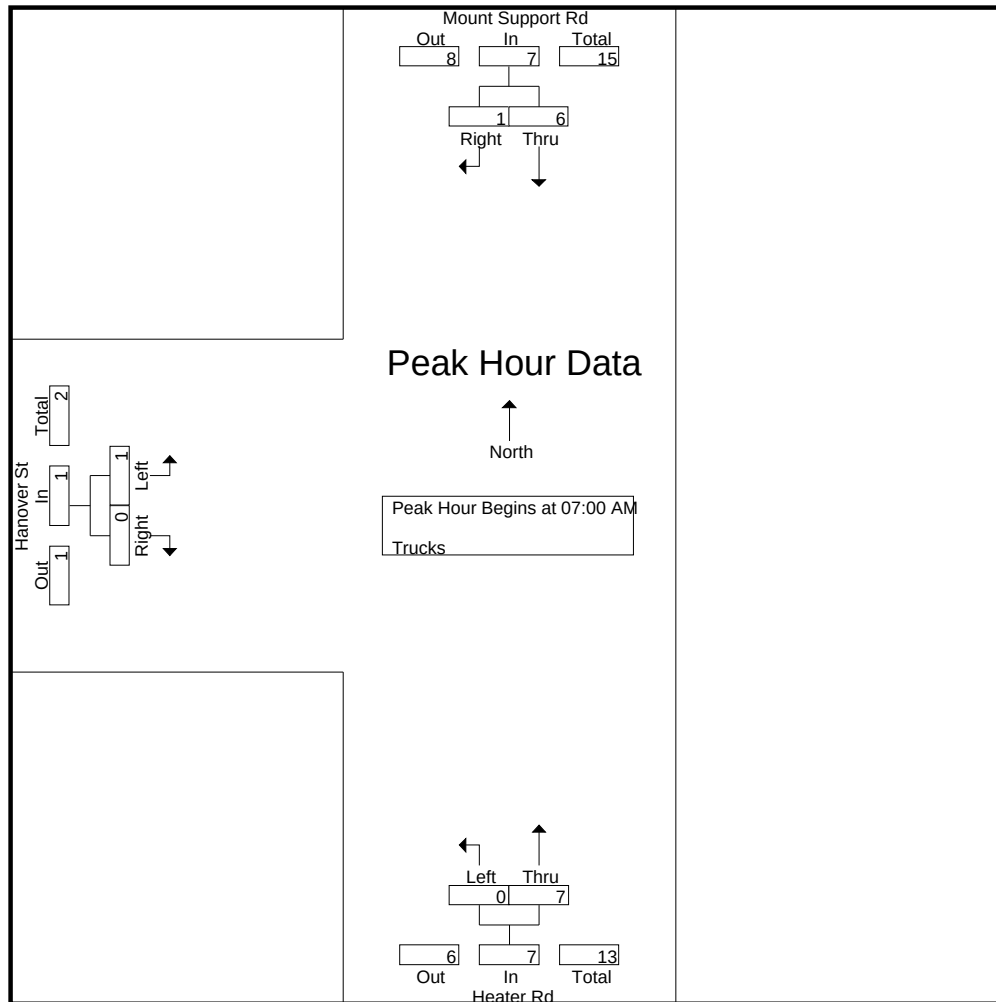
|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 07:00 AM    | 1                              | 1     | 0                       | 1    | 1                       | 0     | 4          |
| 07:15 AM    | 1                              | 0     | 0                       | 2    | 0                       | 0     | 3          |
| 07:30 AM    | 1                              | 0     | 0                       | 1    | 0                       | 0     | 2          |
| 07:45 AM    | 3                              | 0     | 0                       | 3    | 0                       | 0     | 6          |
| Total       | 6                              | 1     | 0                       | 7    | 1                       | 0     | 15         |
| 08:00 AM    | 0                              | 0     | 0                       | 1    | 0                       | 0     | 1          |
| 08:15 AM    | 3                              | 0     | 0                       | 1    | 1                       | 0     | 5          |
| 08:30 AM    | 2                              | 0     | 0                       | 1    | 0                       | 0     | 3          |
| 08:45 AM    | 0                              | 0     | 0                       | 1    | 0                       | 0     | 1          |
| Total       | 5                              | 0     | 0                       | 4    | 1                       | 0     | 10         |
| Grand Total | 11                             | 1     | 0                       | 11   | 2                       | 0     | 25         |
| Apprch %    | 91.7                           | 8.3   | 0                       | 100  | 100                     | 0     |            |
| Total %     | 44                             | 4     | 0                       | 44   | 8                       | 0     |            |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 07:00 AM                                                   | 1                              | 1     | 2          | 0                       | 1    | 1          | 1                       | 0     | 1          | 4          |
| 07:15 AM                                                   | 1                              | 0     | 1          | 0                       | 2    | 2          | 0                       | 0     | 0          | 3          |
| 07:30 AM                                                   | 1                              | 0     | 1          | 0                       | 1    | 1          | 0                       | 0     | 0          | 2          |
| 07:45 AM                                                   | 3                              | 0     | 3          | 0                       | 3    | 3          | 0                       | 0     | 0          | 6          |
| Total Volume                                               | 6                              | 1     | 7          | 0                       | 7    | 7          | 1                       | 0     | 1          | 15         |
| % App. Total                                               | 85.7                           | 14.3  |            | 0                       | 100  |            | 100                     | 0     |            |            |
| PHF                                                        | .500                           | .250  | .583       | .000                    | .583 | .583       | .250                    | .000  | .250       | .625       |



N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 8

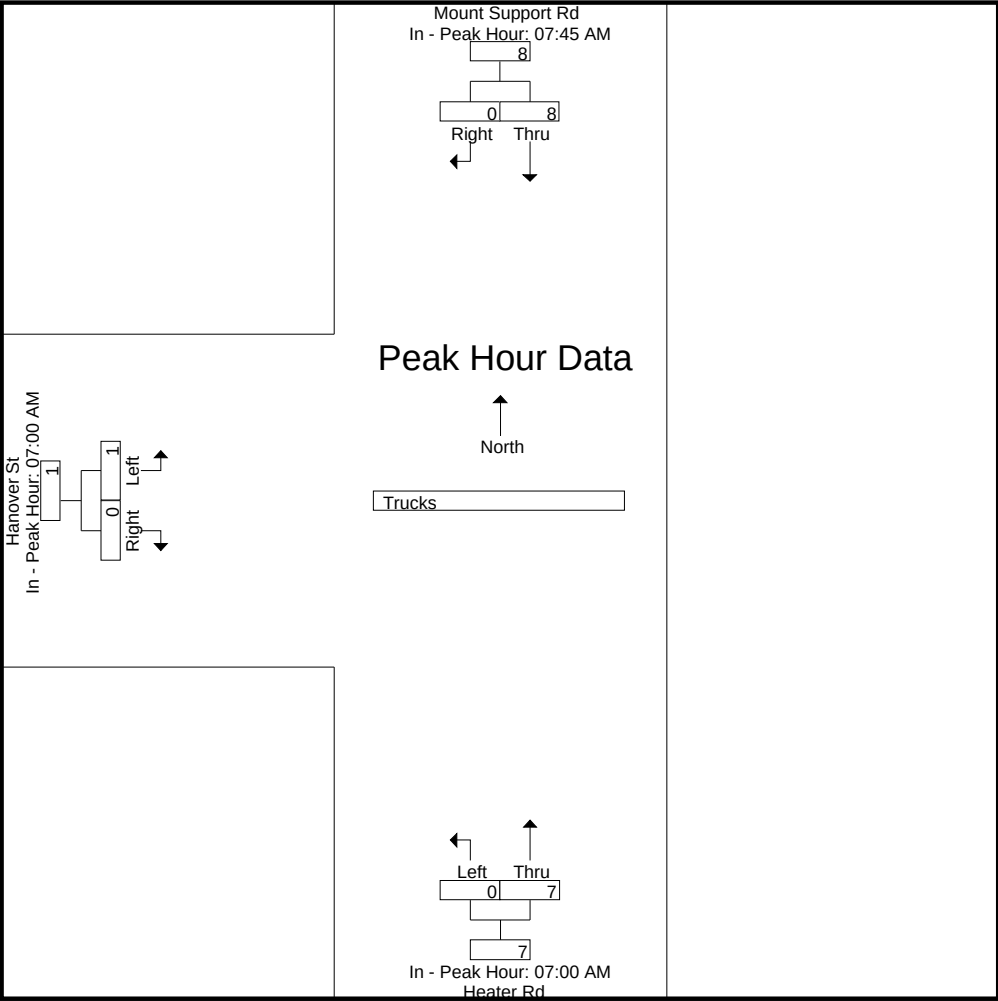


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:45 AM |      |          | 07:00 AM |          |          | 07:00 AM |      |          |
|--------------|----------|------|----------|----------|----------|----------|----------|------|----------|
| +0 mins.     | <b>3</b> | 0    | <b>3</b> | 0        | 1        | 1        | <b>1</b> | 0    | <b>1</b> |
| +15 mins.    | 0        | 0    | 0        | 0        | 2        | 2        | 0        | 0    | 0        |
| +30 mins.    | 3        | 0    | 3        | 0        | 1        | 1        | 0        | 0    | 0        |
| +45 mins.    | 2        | 0    | 2        | 0        | <b>3</b> | <b>3</b> | 0        | 0    | 0        |
| Total Volume | 8        | 0    | 8        | 0        | 7        | 7        | 1        | 0    | 1        |
| % App. Total | 100      | 0    |          | 0        | 100      |          | 100      | 0    |          |
| PHF          | .667     | .000 | .667     | .000     | .583     | .583     | .250     | .000 | .250     |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 10

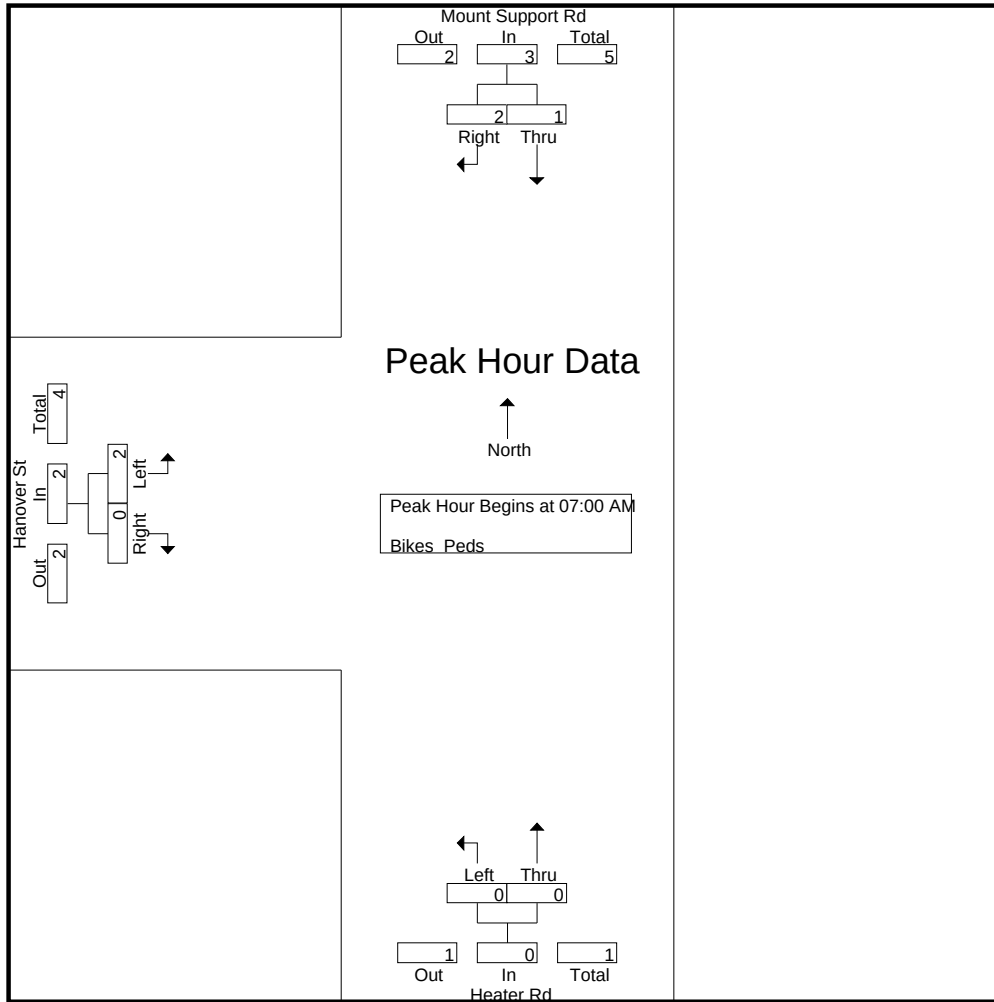
## Groups Printed- Bikes Peds

|             | Mount Support Rd<br>From North |       |      | Heater Rd<br>From South |      |      | Hanover St<br>From West |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------------|-------|------|-------------------------|------|------|-------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Thru                           | Right | Peds | Left                    | Thru | Peds | Left                    | Right | Peds |              |              |            |
| 07:00 AM    | 0                              | 0     | 1    | 0                       | 0    | 0    | 0                       | 0     | 1    | 2            | 0            | 2          |
| 07:15 AM    | 0                              | 1     | 3    | 0                       | 0    | 0    | 1                       | 0     | 0    | 3            | 2            | 5          |
| 07:30 AM    | 0                              | 0     | 0    | 0                       | 0    | 1    | 0                       | 0     | 0    | 1            | 0            | 1          |
| 07:45 AM    | 1                              | 1     | 5    | 0                       | 0    | 0    | 1                       | 0     | 0    | 5            | 3            | 8          |
| Total       | 1                              | 2     | 9    | 0                       | 0    | 1    | 2                       | 0     | 1    | 11           | 5            | 16         |
| 08:00 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 1    | 1            | 0            | 1          |
| 08:15 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 08:30 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 08:45 AM    | 0                              | 0     | 2    | 0                       | 0    | 0    | 0                       | 0     | 1    | 3            | 0            | 3          |
| Total       | 0                              | 0     | 2    | 0                       | 0    | 0    | 0                       | 0     | 2    | 4            | 0            | 4          |
| Grand Total | 1                              | 2     | 11   | 0                       | 0    | 1    | 2                       | 0     | 3    | 15           | 5            | 20         |
| Apprch %    | 33.3                           | 66.7  |      | 0                       | 0    |      | 100                     | 0     |      |              |              |            |
| Total %     | 20                             | 40    |      | 0                       | 0    |      | 40                      | 0     |      | 75           | 25           |            |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 07:00 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 07:15 AM                                                   | 0                              | 1     | 1          | 0                       | 0    | 0          | 1                       | 0     | 1          | 2          |
| 07:30 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 07:45 AM                                                   | 1                              | 1     | 2          | 0                       | 0    | 0          | 1                       | 0     | 1          | 3          |
| Total Volume                                               | 1                              | 2     | 3          | 0                       | 0    | 0          | 2                       | 0     | 2          | 5          |
| % App. Total                                               | 33.3                           | 66.7  |            | 0                       | 0    |            | 100                     | 0     |            |            |
| PHF                                                        | .250                           | .500  | .375       | .000                    | .000 | .000       | .500                    | .000  | .500       | .417       |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 11



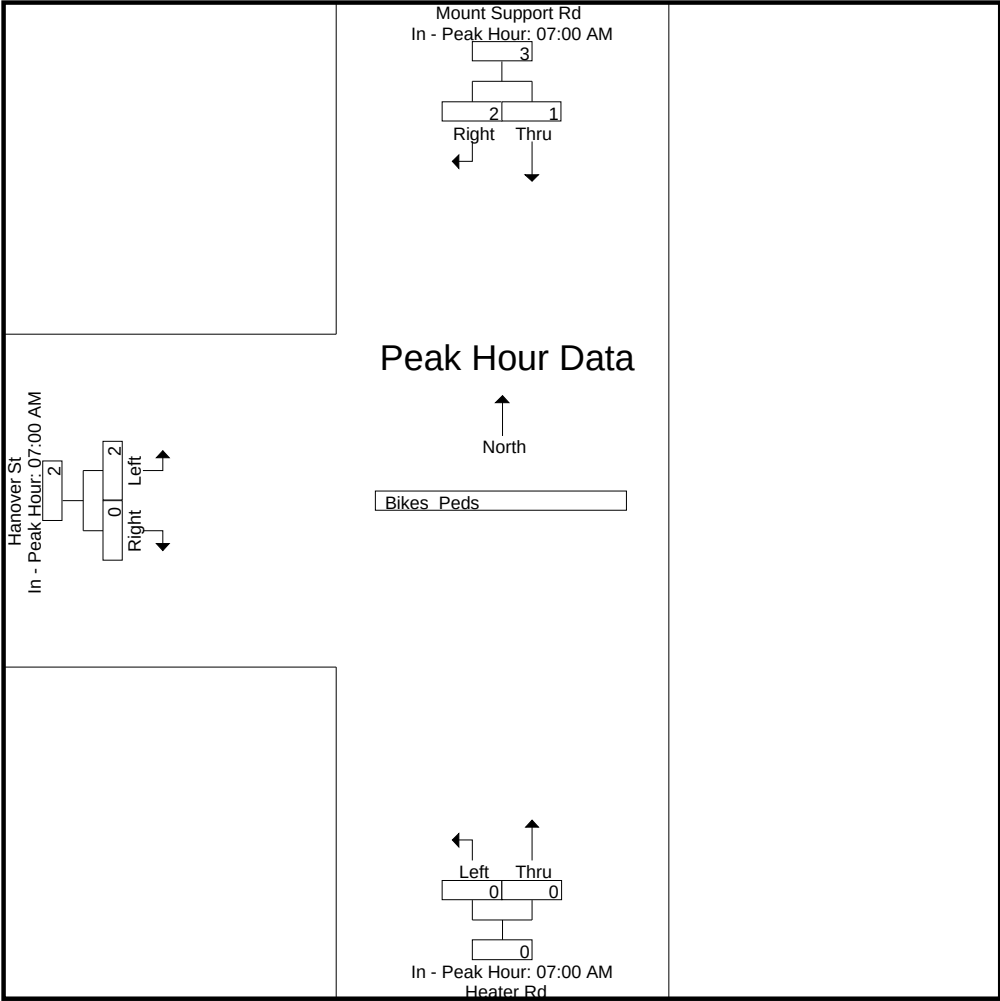
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:00 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 1    | 1    | 0        | 0    | 0    | 1        | 0    | 1    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 1        | 1    | 2    | 0        | 0    | 0    | 1        | 0    | 1    |
| Total Volume | 1        | 2    | 3    | 0        | 0    | 0    | 2        | 0    | 2    |
| % App. Total | 33.3     | 66.7 |      | 0        | 0    |      | 100      | 0    |      |
| PHF          | .250     | .500 | .375 | .000     | .000 | .000 | .500     | .000 | .500 |



N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 12



# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 02:00 PM    | 28                             | 4     | 0                       | 12   | 6                       | 0     | 50         |
| 02:15 PM    | 24                             | 1     | 0                       | 25   | 3                       | 0     | 53         |
| 02:30 PM    | 43                             | 3     | 0                       | 17   | 1                       | 0     | 64         |
| 02:45 PM    | 31                             | 6     | 0                       | 14   | 4                       | 0     | 55         |
| Total       | 126                            | 14    | 0                       | 68   | 14                      | 0     | 222        |
| 03:00 PM    | 40                             | 4     | 0                       | 21   | 8                       | 0     | 73         |
| 03:15 PM    | 36                             | 1     | 0                       | 19   | 8                       | 1     | 65         |
| 03:30 PM    | 65                             | 5     | 1                       | 22   | 3                       | 0     | 96         |
| 03:45 PM    | 42                             | 7     | 0                       | 22   | 1                       | 0     | 72         |
| Total       | 183                            | 17    | 1                       | 84   | 20                      | 1     | 306        |
| 04:00 PM    | 63                             | 8     | 0                       | 14   | 5                       | 0     | 90         |
| 04:15 PM    | 64                             | 9     | 1                       | 17   | 3                       | 0     | 94         |
| 04:30 PM    | 51                             | 4     | 1                       | 24   | 1                       | 0     | 81         |
| 04:45 PM    | 43                             | 9     | 0                       | 26   | 3                       | 1     | 82         |
| Total       | 221                            | 30    | 2                       | 81   | 12                      | 1     | 347        |
| 05:00 PM    | 83                             | 10    | 0                       | 27   | 3                       | 0     | 123        |
| 05:15 PM    | 75                             | 5     | 0                       | 27   | 1                       | 0     | 108        |
| 05:30 PM    | 49                             | 6     | 0                       | 18   | 2                       | 1     | 76         |
| 05:45 PM    | 26                             | 3     | 0                       | 20   | 3                       | 0     | 52         |
| Total       | 233                            | 24    | 0                       | 92   | 9                       | 1     | 359        |
| Grand Total | 763                            | 85    | 3                       | 325  | 55                      | 3     | 1234       |
| Apprch %    | 90                             | 10    | 0.9                     | 99.1 | 94.8                    | 5.2   |            |
| Total %     | 61.8                           | 6.9   | 0.2                     | 26.3 | 4.5                     | 0.2   |            |
| Cars        | 737                            | 85    | 3                       | 309  | 52                      | 3     | 1189       |
| % Cars      | 96.6                           | 100   | 100                     | 95.1 | 94.5                    | 100   | 96.4       |
| Trucks      | 26                             | 0     | 0                       | 16   | 3                       | 0     | 45         |
| % Trucks    | 3.4                            | 0     | 0                       | 4.9  | 5.5                     | 0     | 3.6        |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                                |       |            |                         |      |            |                         |       |            |            |
| 04:30 PM                                                   | 51                             | 4     | 55         | 1                       | 24   | 25         | 1                       | 0     | 1          | 81         |
| 04:45 PM                                                   | 43                             | 9     | 52         | 0                       | 26   | 26         | 3                       | 1     | 4          | 82         |
| 05:00 PM                                                   | 83                             | 10    | 93         | 0                       | 27   | 27         | 3                       | 0     | 3          | 123        |
| 05:15 PM                                                   | 75                             | 5     | 80         | 0                       | 27   | 27         | 1                       | 0     | 1          | 108        |
| Total Volume                                               | 252                            | 28    | 280        | 1                       | 104  | 105        | 8                       | 1     | 9          | 394        |
| % App. Total                                               | 90                             | 10    |            | 1                       | 99   |            | 88.9                    | 11.1  |            |            |
| PHF                                                        | .759                           | .700  | .753       | .250                    | .963 | .972       | .667                    | .250  | .563       | .801       |
| Cars                                                       | 243                            | 28    | 271        | 1                       | 98   | 99         | 8                       | 1     | 9          | 379        |
| % Cars                                                     | 96.4                           | 100   | 96.8       | 100                     | 94.2 | 94.3       | 100                     | 100   | 100        | 96.2       |
| Trucks                                                     | 9                              | 0     | 9          | 0                       | 6    | 6          | 0                       | 0     | 0          | 15         |
| % Trucks                                                   | 3.6                            | 0     | 3.2        | 0                       | 5.8  | 5.7        | 0                       | 0     | 0          | 3.8        |

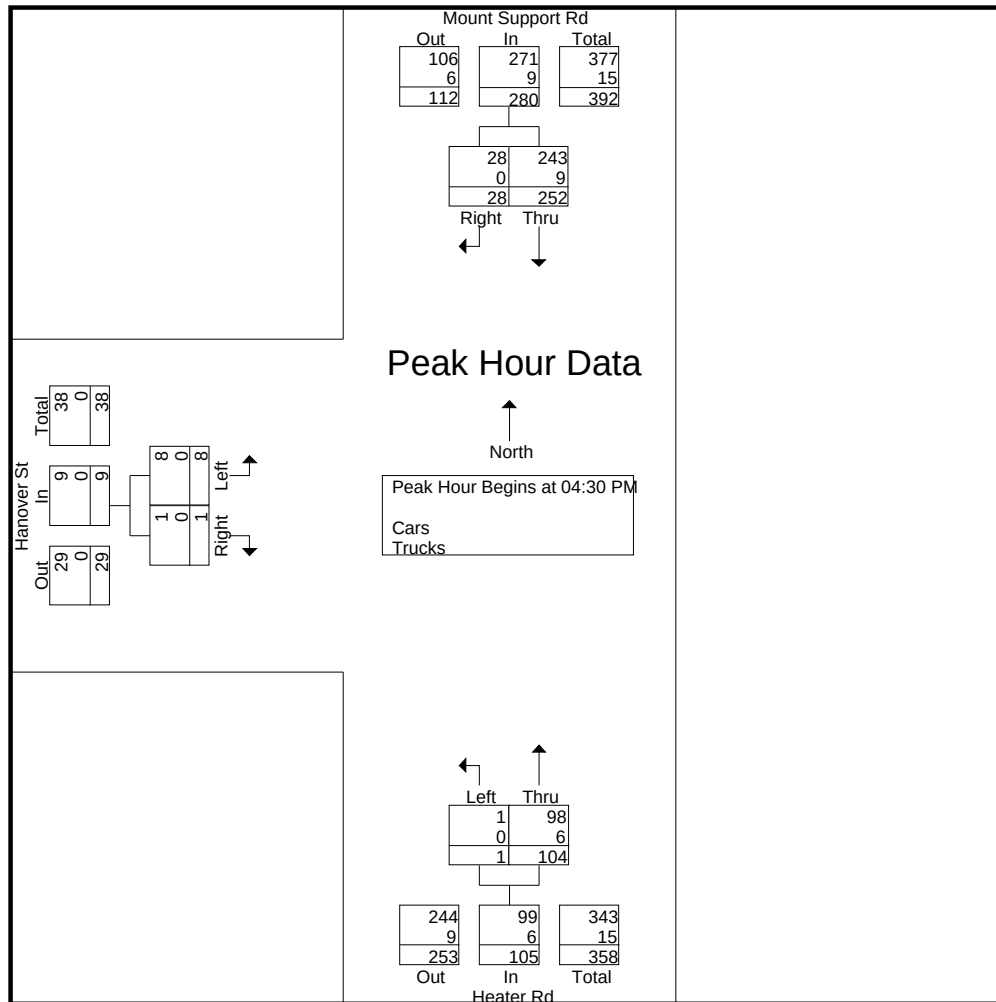


# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 2

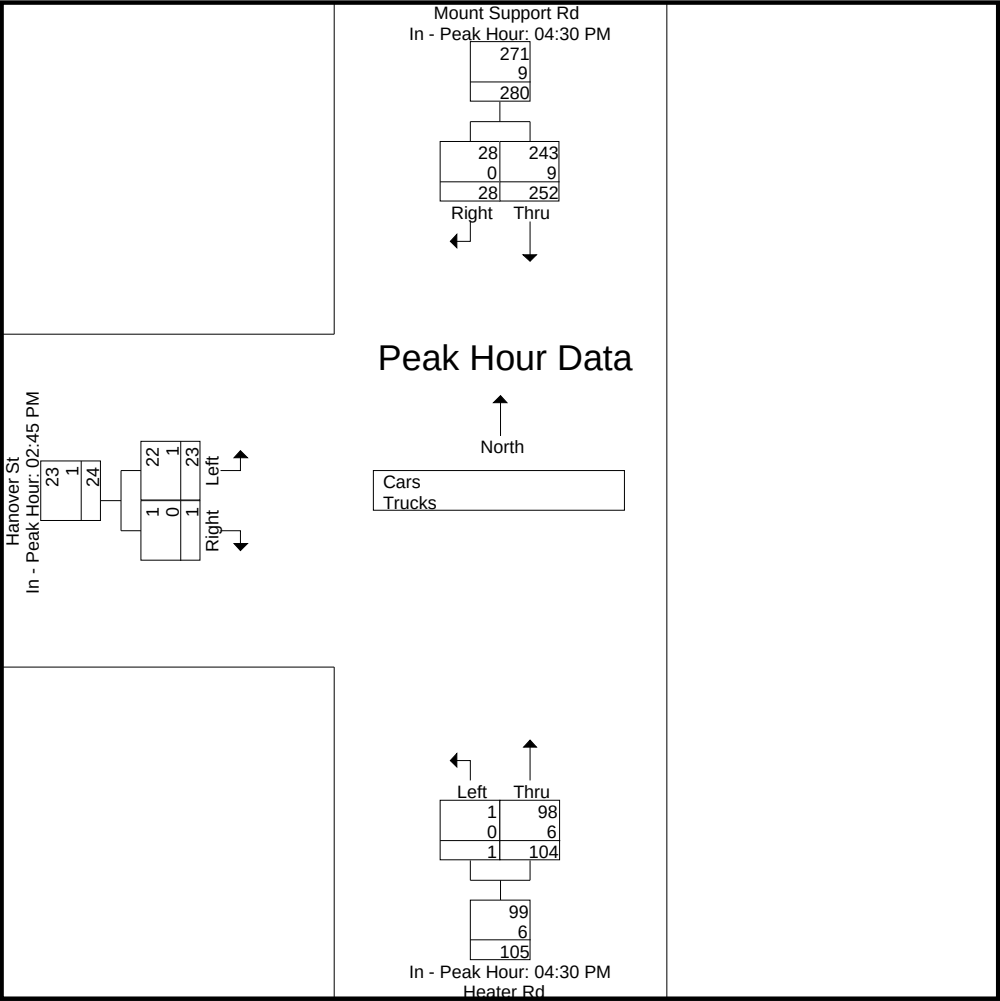


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      | 04:30 PM |      |      | 02:45 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 51       | 4    | 55   | 1        | 24   | 25   | 4        | 0    | 4    |
| +15 mins.    | 43       | 9    | 52   | 0        | 26   | 26   | 8        | 0    | 8    |
| +30 mins.    | 83       | 10   | 93   | 0        | 27   | 27   | 8        | 1    | 9    |
| +45 mins.    | 75       | 5    | 80   | 0        | 27   | 27   | 3        | 0    | 3    |
| Total Volume | 252      | 28   | 280  | 1        | 104  | 105  | 23       | 1    | 24   |
| % App. Total | 90       | 10   |      | 1        | 99   |      | 95.8     | 4.2  |      |
| PHF          | .759     | .700 | .753 | .250     | .963 | .972 | .719     | .250 | .667 |
| Cars         | 243      | 28   | 271  | 1        | 98   | 99   | 22       | 1    | 23   |
| % Cars       | 96.4     | 100  | 96.8 | 100      | 94.2 | 94.3 | 95.7     | 100  | 95.8 |
| Trucks       | 9        | 0    | 9    | 0        | 6    | 6    | 1        | 0    | 1    |
| % Trucks     | 3.6      | 0    | 3.2  | 0        | 5.8  | 5.7  | 4.3      | 0    | 4.2  |

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 02:00 PM    | 27                             | 4     | 0                       | 12   | 6                       | 0     | 49         |
| 02:15 PM    | 23                             | 1     | 0                       | 23   | 2                       | 0     | 49         |
| 02:30 PM    | 41                             | 3     | 0                       | 16   | 0                       | 0     | 60         |
| 02:45 PM    | 29                             | 6     | 0                       | 13   | 4                       | 0     | 52         |
| Total       | 120                            | 14    | 0                       | 64   | 12                      | 0     | 210        |
| 03:00 PM    | 38                             | 4     | 0                       | 21   | 8                       | 0     | 71         |
| 03:15 PM    | 35                             | 1     | 0                       | 18   | 7                       | 1     | 62         |
| 03:30 PM    | 63                             | 5     | 1                       | 21   | 3                       | 0     | 93         |
| 03:45 PM    | 42                             | 7     | 0                       | 21   | 1                       | 0     | 71         |
| Total       | 178                            | 17    | 1                       | 81   | 19                      | 1     | 297        |
| 04:00 PM    | 60                             | 8     | 0                       | 13   | 5                       | 0     | 86         |
| 04:15 PM    | 63                             | 9     | 1                       | 16   | 3                       | 0     | 92         |
| 04:30 PM    | 50                             | 4     | 1                       | 23   | 1                       | 0     | 79         |
| 04:45 PM    | 41                             | 9     | 0                       | 23   | 3                       | 1     | 77         |
| Total       | 214                            | 30    | 2                       | 75   | 12                      | 1     | 334        |
| 05:00 PM    | 83                             | 10    | 0                       | 25   | 3                       | 0     | 121        |
| 05:15 PM    | 69                             | 5     | 0                       | 27   | 1                       | 0     | 102        |
| 05:30 PM    | 48                             | 6     | 0                       | 18   | 2                       | 1     | 75         |
| 05:45 PM    | 25                             | 3     | 0                       | 19   | 3                       | 0     | 50         |
| Total       | 225                            | 24    | 0                       | 89   | 9                       | 1     | 348        |
| Grand Total | 737                            | 85    | 3                       | 309  | 52                      | 3     | 1189       |
| Apprch %    | 89.7                           | 10.3  | 1                       | 99   | 94.5                    | 5.5   |            |
| Total %     | 62                             | 7.1   | 0.3                     | 26   | 4.4                     | 0.3   |            |

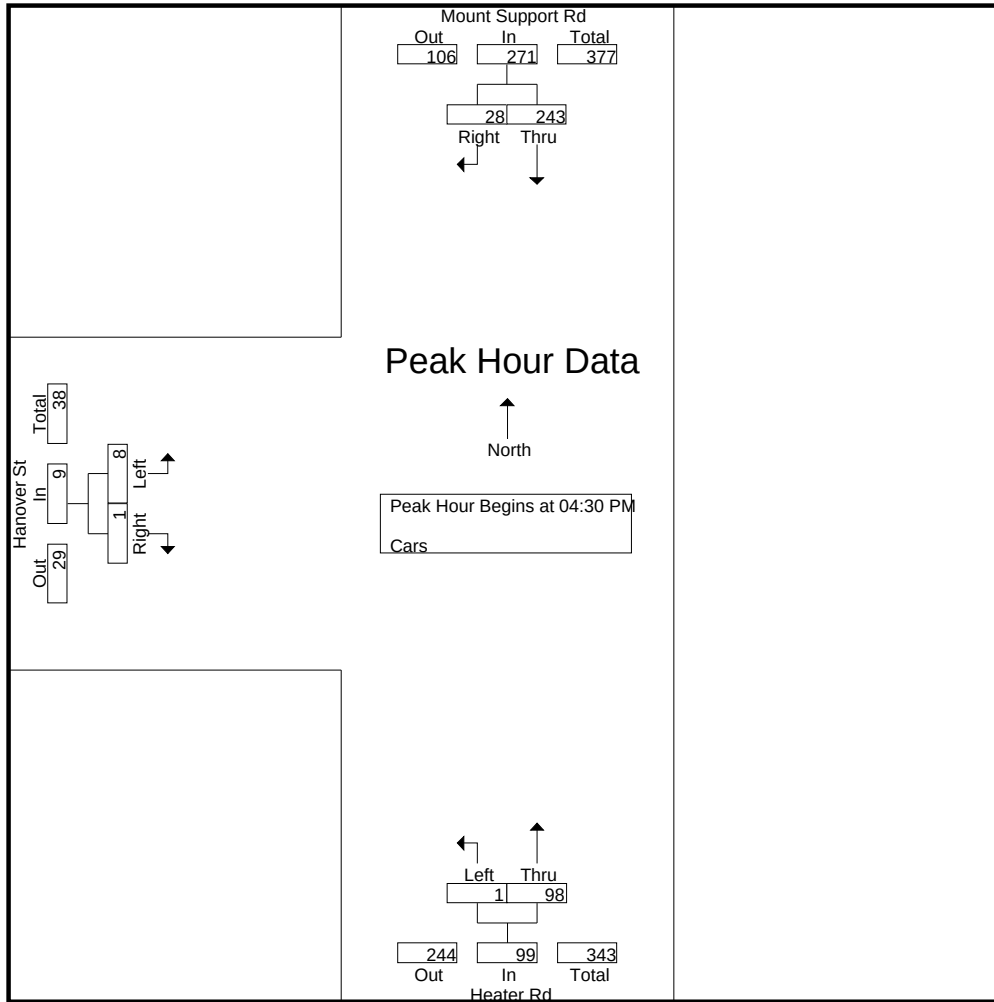
|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                                |       |            |                         |      |            |                         |       |            |            |
| 04:30 PM                                                   | 50                             | 4     | 54         | 1                       | 23   | 24         | 1                       | 0     | 1          | 79         |
| 04:45 PM                                                   | 41                             | 9     | 50         | 0                       | 23   | 23         | 3                       | 1     | 4          | 77         |
| 05:00 PM                                                   | 83                             | 10    | 93         | 0                       | 25   | 25         | 3                       | 0     | 3          | 121        |
| 05:15 PM                                                   | 69                             | 5     | 74         | 0                       | 27   | 27         | 1                       | 0     | 1          | 102        |
| Total Volume                                               | 243                            | 28    | 271        | 1                       | 98   | 99         | 8                       | 1     | 9          | 379        |
| % App. Total                                               | 89.7                           | 10.3  |            | 1                       | 99   |            | 88.9                    | 11.1  |            |            |
| PHF                                                        | .732                           | .700  | .728       | .250                    | .907 | .917       | .667                    | .250  | .563       | .783       |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 5

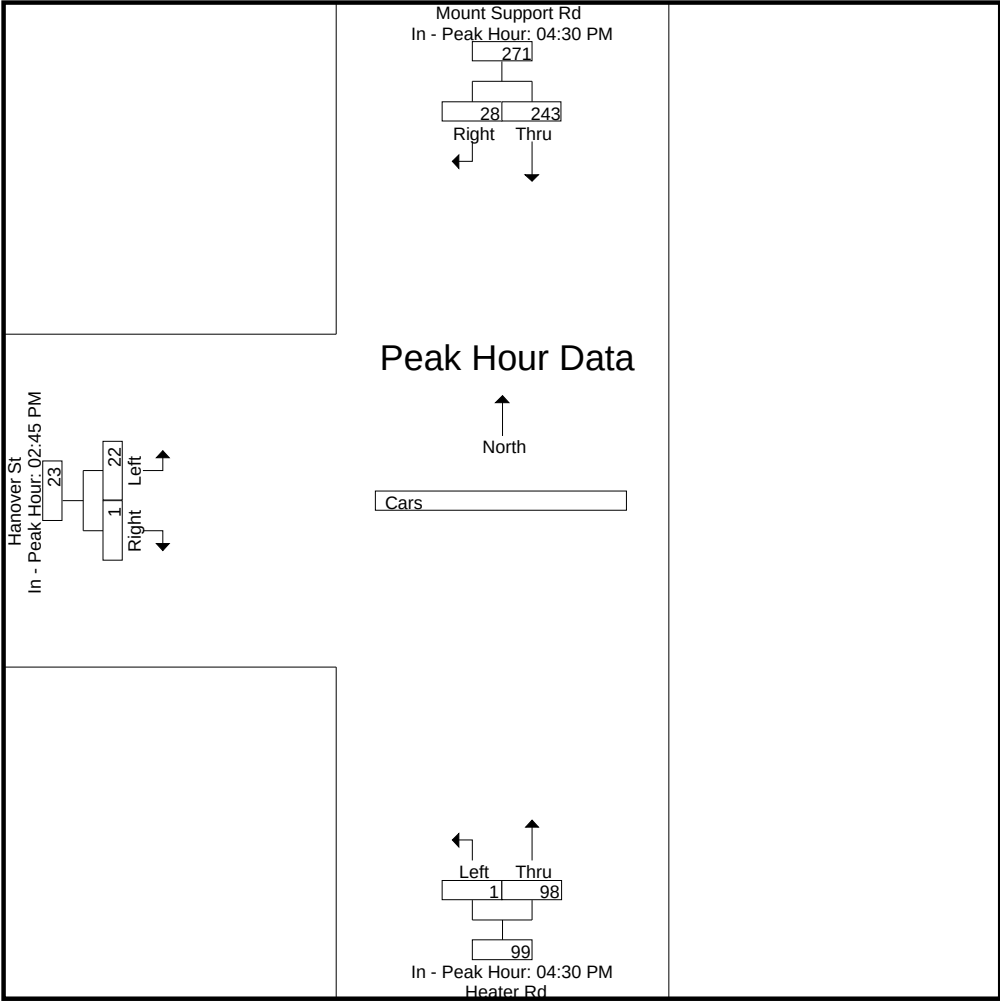


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      | 04:30 PM |      |      | 02:45 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 50       | 4    | 54   | 1        | 23   | 24   | 4        | 0    | 4    |
| +15 mins.    | 41       | 9    | 50   | 0        | 23   | 23   | 8        | 0    | 8    |
| +30 mins.    | 83       | 10   | 93   | 0        | 25   | 25   | 7        | 1    | 8    |
| +45 mins.    | 69       | 5    | 74   | 0        | 27   | 27   | 3        | 0    | 3    |
| Total Volume | 243      | 28   | 271  | 1        | 98   | 99   | 22       | 1    | 23   |
| % App. Total | 89.7     | 10.3 |      | 1        | 99   |      | 95.7     | 4.3  |      |
| PHF          | .732     | .700 | .728 | .250     | .907 | .917 | .688     | .250 | .719 |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Mount Support Rd<br>From North |       |  | Heater Rd<br>From South |      |  | Hanover St<br>From West |       |  |            |
|-------------|--------------------------------|-------|--|-------------------------|------|--|-------------------------|-------|--|------------|
| Start Time  | Thru                           | Right |  | Left                    | Thru |  | Left                    | Right |  | Int. Total |
| 02:00 PM    | 1                              | 0     |  | 0                       | 0    |  | 0                       | 0     |  | 1          |
| 02:15 PM    | 1                              | 0     |  | 0                       | 2    |  | 1                       | 0     |  | 4          |
| 02:30 PM    | 2                              | 0     |  | 0                       | 1    |  | 1                       | 0     |  | 4          |
| 02:45 PM    | 2                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 3          |
| Total       | 6                              | 0     |  | 0                       | 4    |  | 2                       | 0     |  | 12         |
| 03:00 PM    | 2                              | 0     |  | 0                       | 0    |  | 0                       | 0     |  | 2          |
| 03:15 PM    | 1                              | 0     |  | 0                       | 1    |  | 1                       | 0     |  | 3          |
| 03:30 PM    | 2                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 3          |
| 03:45 PM    | 0                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 1          |
| Total       | 5                              | 0     |  | 0                       | 3    |  | 1                       | 0     |  | 9          |
| 04:00 PM    | 3                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 4          |
| 04:15 PM    | 1                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 2          |
| 04:30 PM    | 1                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 2          |
| 04:45 PM    | 2                              | 0     |  | 0                       | 3    |  | 0                       | 0     |  | 5          |
| Total       | 7                              | 0     |  | 0                       | 6    |  | 0                       | 0     |  | 13         |
| 05:00 PM    | 0                              | 0     |  | 0                       | 2    |  | 0                       | 0     |  | 2          |
| 05:15 PM    | 6                              | 0     |  | 0                       | 0    |  | 0                       | 0     |  | 6          |
| 05:30 PM    | 1                              | 0     |  | 0                       | 0    |  | 0                       | 0     |  | 1          |
| 05:45 PM    | 1                              | 0     |  | 0                       | 1    |  | 0                       | 0     |  | 2          |
| Total       | 8                              | 0     |  | 0                       | 3    |  | 0                       | 0     |  | 11         |
| Grand Total | 26                             | 0     |  | 0                       | 16   |  | 3                       | 0     |  | 45         |
| Apprch %    | 100                            |       |  | 0                       | 100  |  | 100                     |       |  |            |
| Total %     | 57.8                           | 0     |  | 0                       | 35.6 |  | 6.7                     | 0     |  |            |

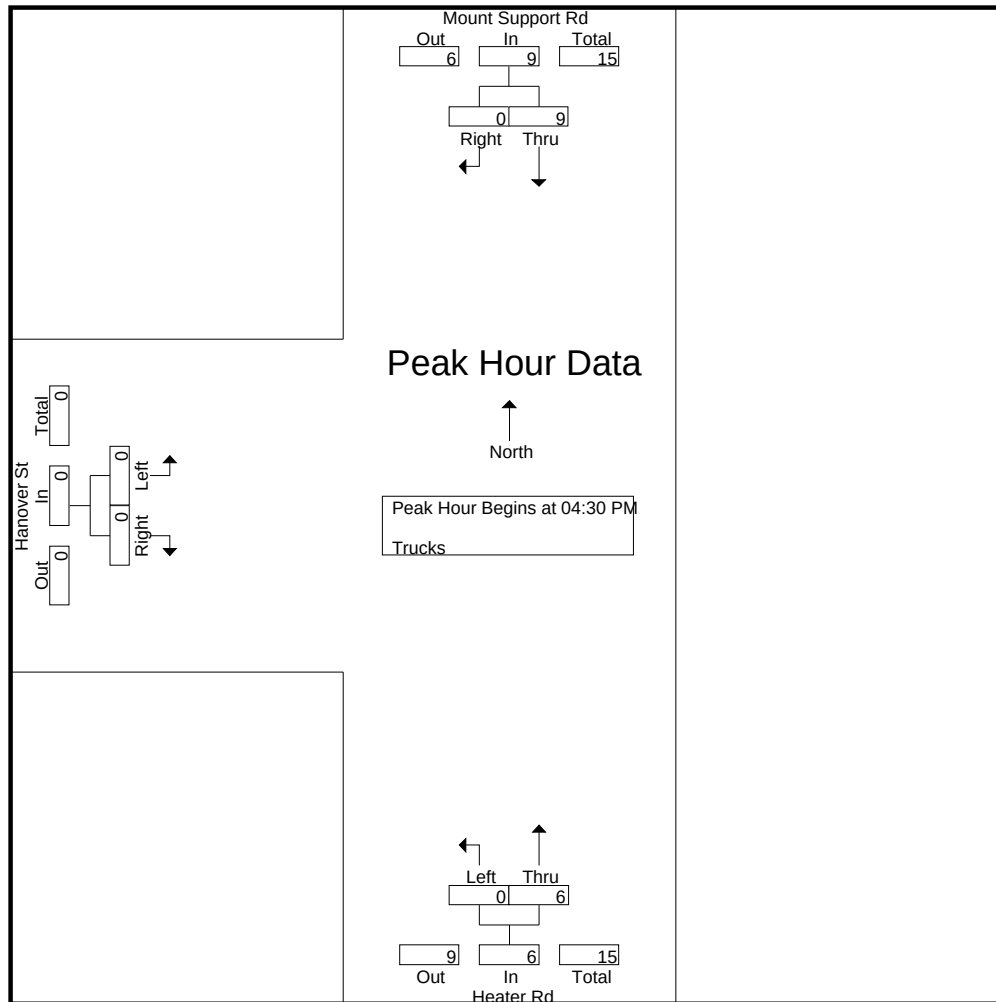
|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                                |       |            |                         |      |            |                         |       |            |            |
| 04:30 PM                                                   | 1                              | 0     | 1          | 0                       | 1    | 1          | 0                       | 0     | 0          | 2          |
| 04:45 PM                                                   | 2                              | 0     | 2          | 0                       | 3    | 3          | 0                       | 0     | 0          | 5          |
| 05:00 PM                                                   | 0                              | 0     | 0          | 0                       | 2    | 2          | 0                       | 0     | 0          | 2          |
| 05:15 PM                                                   | 6                              | 0     | 6          | 0                       | 0    | 0          | 0                       | 0     | 0          | 6          |
| Total Volume                                               | 9                              | 0     | 9          | 0                       | 6    | 6          | 0                       | 0     | 0          | 15         |
| % App. Total                                               | 100                            | 0     |            | 0                       | 100  |            | 0                       | 0     |            |            |
| PHF                                                        | .375                           | .000  | .375       | .000                    | .500 | .500       | .000                    | .000  | .000       | .625       |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933003  
 Site Code : 52933003  
 Start Date : 11/10/2022  
 Page No : 8

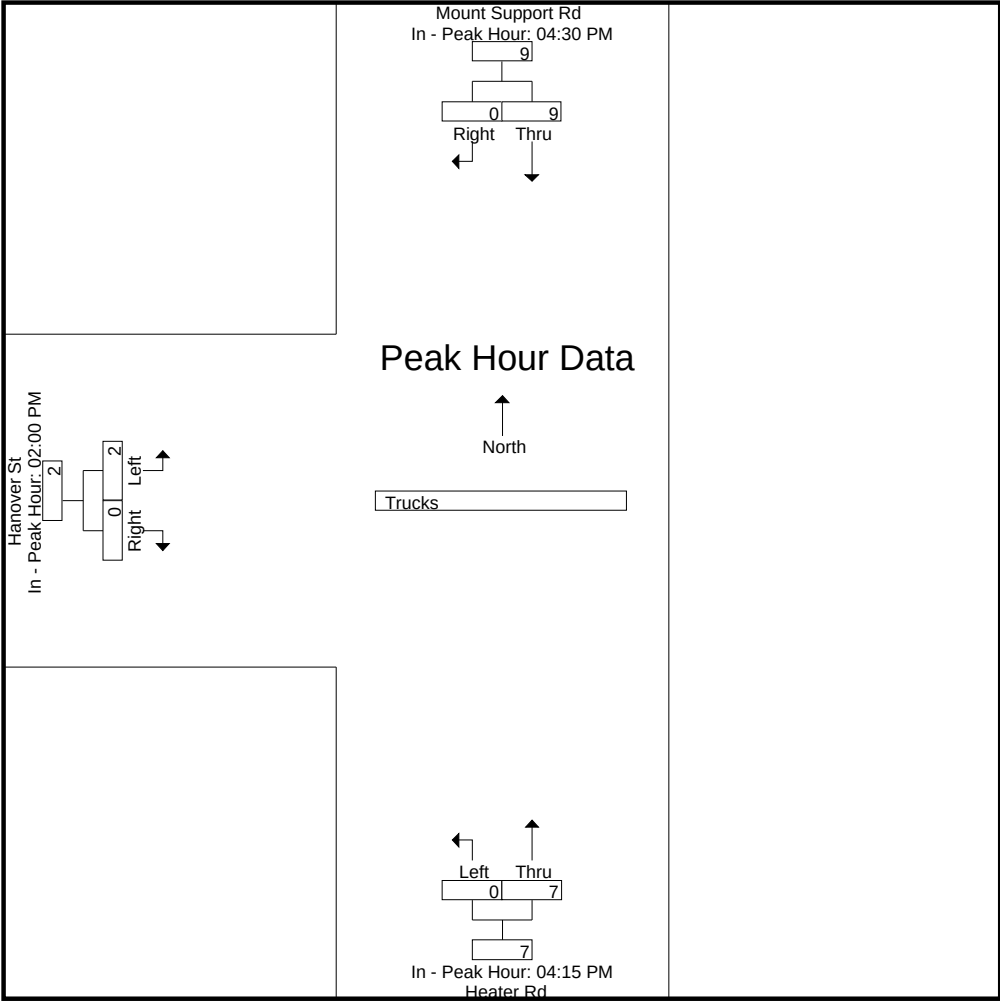


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      | 04:15 PM |      |      | 02:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 1        | 0    | 1    | 0        | 1    | 1    | 0        | 0    | 0    |
| +15 mins.    | 2        | 0    | 2    | 0        | 1    | 1    | 1        | 0    | 1    |
| +30 mins.    | 0        | 0    | 0    | 0        | 3    | 3    | 1        | 0    | 1    |
| +45 mins.    | 6        | 0    | 6    | 0        | 2    | 2    | 0        | 0    | 0    |
| Total Volume | 9        | 0    | 9    | 0        | 7    | 7    | 2        | 0    | 2    |
| % App. Total | 100      | 0    |      | 0        | 100  |      | 100      | 0    |      |
| PHF          | .375     | .000 | .375 | .000     | .583 | .583 | .500     | .000 | .500 |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd

E/W Street : Hanover Street

City/State : Lebanon, NH

Weather : Clear

File Name : 52933003

Site Code : 52933003

Start Date : 11/10/2022

Page No : 10

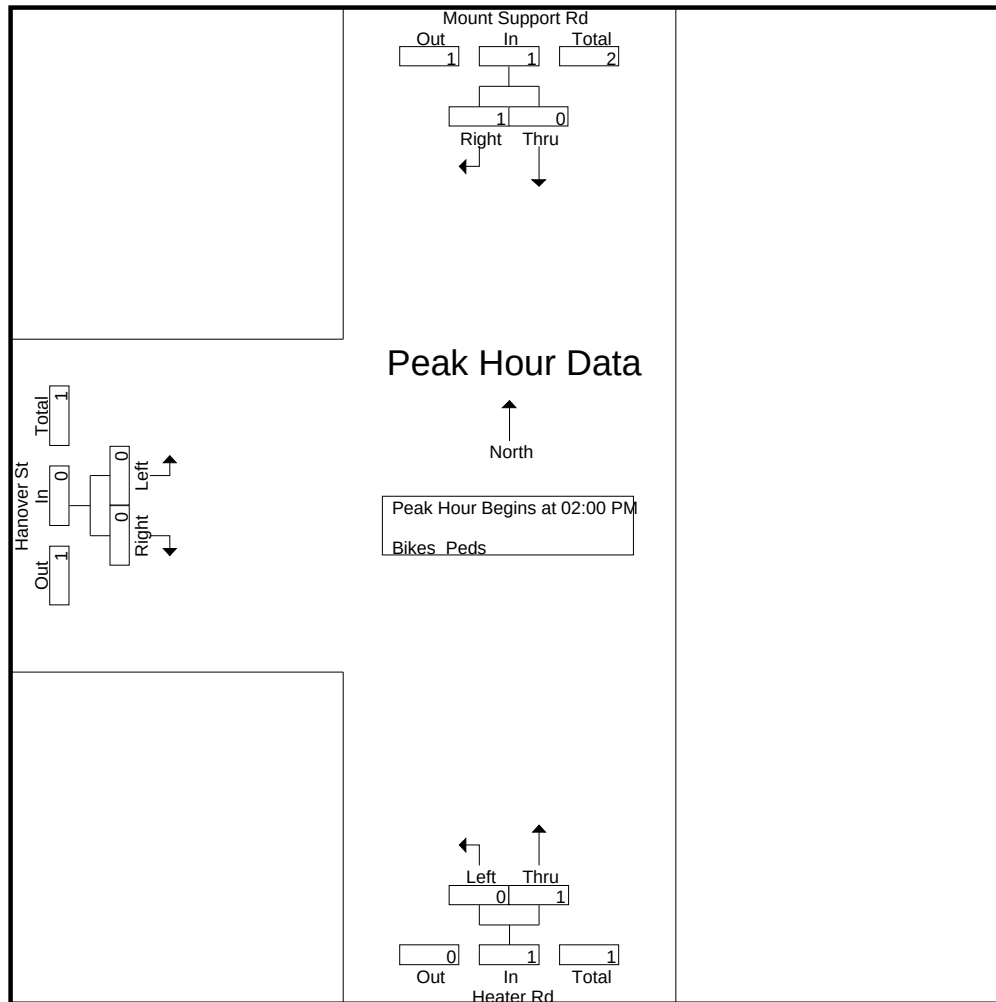
## Groups Printed- Bikes Peds

|             | Mount Support Rd<br>From North |       |      | Heater Rd<br>From South |      |      | Hanover St<br>From West |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------------|-------|------|-------------------------|------|------|-------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Thru                           | Right | Peds | Left                    | Thru | Peds | Left                    | Right | Peds |              |              |            |
| 02:00 PM    | 0                              | 1     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| 02:15 PM    | 0                              | 0     | 0    | 0                       | 1    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| 02:30 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 02:45 PM    | 0                              | 0     | 2    | 0                       | 0    | 0    | 0                       | 0     | 0    | 2            | 0            | 2          |
| Total       | 0                              | 1     | 2    | 0                       | 1    | 0    | 0                       | 0     | 0    | 2            | 2            | 4          |
| 03:00 PM    | 0                              | 1     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| 03:15 PM    | 0                              | 0     | 0    | 0                       | 0    | 1    | 0                       | 0     | 0    | 1            | 0            | 1          |
| 03:30 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 03:45 PM    | 0                              | 0     | 0    | 0                       | 0    | 1    | 0                       | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                              | 1     | 0    | 0                       | 0    | 2    | 0                       | 0     | 0    | 2            | 1            | 3          |
| 04:00 PM    | 1                              | 0     | 1    | 0                       | 1    | 0    | 0                       | 0     | 0    | 1            | 2            | 3          |
| 04:15 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 04:30 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 04:45 PM    | 0                              | 0     | 0    | 0                       | 0    | 1    | 0                       | 0     | 0    | 1            | 0            | 1          |
| Total       | 1                              | 0     | 1    | 0                       | 1    | 1    | 0                       | 0     | 0    | 2            | 2            | 4          |
| 05:00 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 05:15 PM    | 0                              | 1     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| 05:30 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 05:45 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                              | 1     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| Grand Total | 1                              | 3     | 3    | 0                       | 2    | 3    | 0                       | 0     | 0    | 6            | 6            | 12         |
| Apprch %    | 25                             | 75    |      | 0                       | 100  |      | 0                       | 0     |      |              |              |            |
| Total %     | 16.7                           | 50    |      | 0                       | 33.3 |      | 0                       | 0     |      | 50           | 50           |            |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                                |       |            |                         |      |            |                         |       |            |            |
| 02:00 PM                                                   | 0                              | 1     | 1          | 0                       | 0    | 0          | 0                       | 0     | 0          | 1          |
| 02:15 PM                                                   | 0                              | 0     | 0          | 0                       | 1    | 1          | 0                       | 0     | 0          | 1          |
| 02:30 PM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 02:45 PM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| Total Volume                                               | 0                              | 1     | 1          | 0                       | 1    | 1          | 0                       | 0     | 0          | 2          |
| % App. Total                                               | 0                              | 100   |            | 0                       | 100  |            | 0                       | 0     |            |            |
| PHF                                                        | .000                           | .250  | .250       | .000                    | .250 | .250       | .000                    | .000  | .000       | .500       |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 11

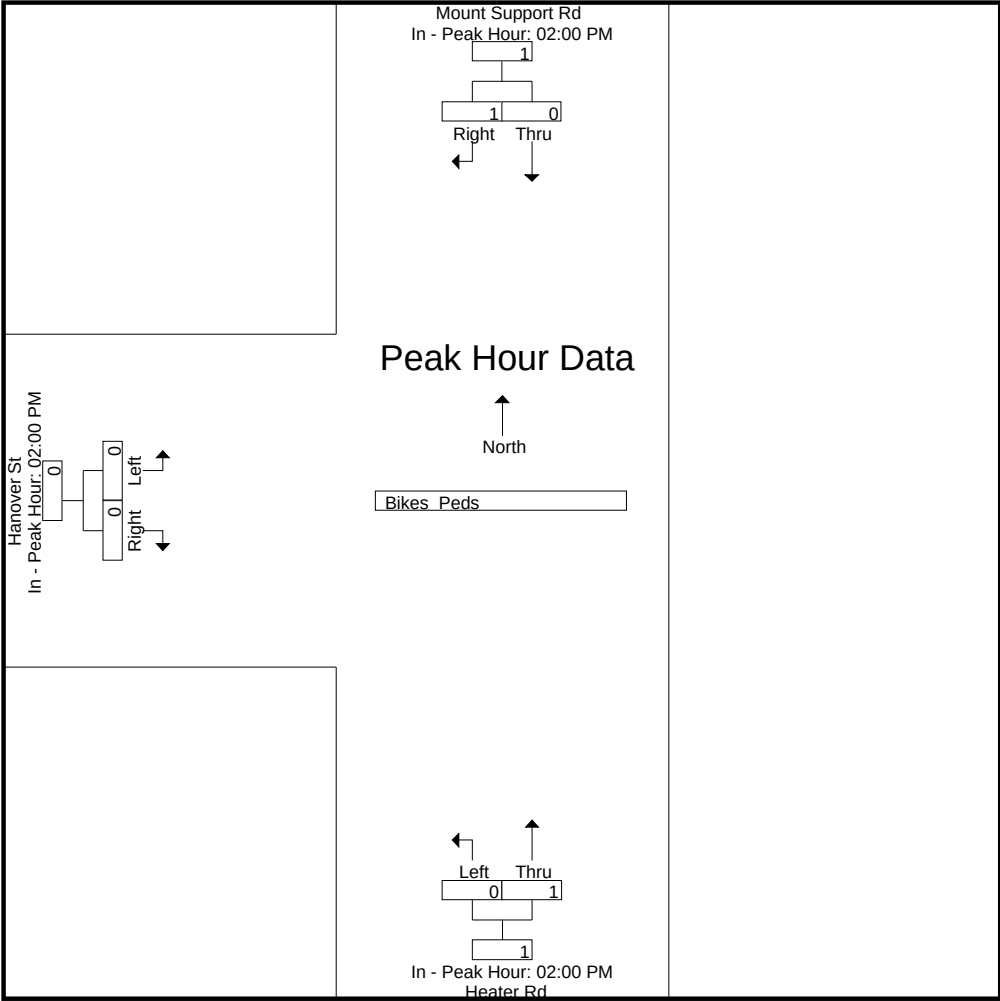


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:00 PM |      |      | 02:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 1    | 1    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 1    | 1    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 1    | 1    | 0        | 1    | 1    | 0        | 0    | 0    |
| % App. Total | 0        | 100  |      | 0        | 100  |      | 0        | 0    |      |
| PHF          | .000     | .250 | .250 | .000     | .250 | .250 | .000     | .000 | .000 |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933003  
Site Code : 52933003  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Mount Support Rd<br>From North |       |  | Heater Rd<br>From South |      | Hanover St<br>From West |       |  |            |
|-------------|--------------------------------|-------|--|-------------------------|------|-------------------------|-------|--|------------|
| Start Time  | Thru                           | Right |  | Left                    | Thru | Left                    | Right |  | Int. Total |
| 11:00 AM    | 11                             | 1     |  | 0                       | 16   | 1                       | 0     |  | 29         |
| 11:15 AM    | 16                             | 1     |  | 0                       | 20   | 3                       | 0     |  | 40         |
| 11:30 AM    | 15                             | 3     |  | 0                       | 13   | 3                       | 0     |  | 34         |
| 11:45 AM    | 17                             | 5     |  | 0                       | 5    | 0                       | 0     |  | 27         |
| Total       | 59                             | 10    |  | 0                       | 54   | 7                       | 0     |  | 130        |
| 12:00 PM    | 18                             | 3     |  | 0                       | 13   | 3                       | 0     |  | 37         |
| 12:15 PM    | 12                             | 3     |  | 1                       | 9    | 2                       | 0     |  | 27         |
| 12:30 PM    | 18                             | 0     |  | 0                       | 10   | 3                       | 0     |  | 31         |
| 12:45 PM    | 11                             | 0     |  | 0                       | 14   | 2                       | 0     |  | 27         |
| Total       | 59                             | 6     |  | 1                       | 46   | 10                      | 0     |  | 122        |
| Grand Total | 118                            | 16    |  | 1                       | 100  | 17                      | 0     |  | 252        |
| Apprch %    | 88.1                           | 11.9  |  | 1                       | 99   | 100                     | 0     |  |            |
| Total %     | 46.8                           | 6.3   |  | 0.4                     | 39.7 | 6.7                     | 0     |  |            |
| Cars        | 118                            | 16    |  | 1                       | 100  | 17                      | 0     |  | 252        |
| % Cars      | 100                            | 100   |  | 100                     | 100  | 100                     | 0     |  | 100        |
| Trucks      | 0                              | 0     |  | 0                       | 0    | 0                       | 0     |  | 0          |
| % Trucks    | 0                              | 0     |  | 0                       | 0    | 0                       | 0     |  | 0          |

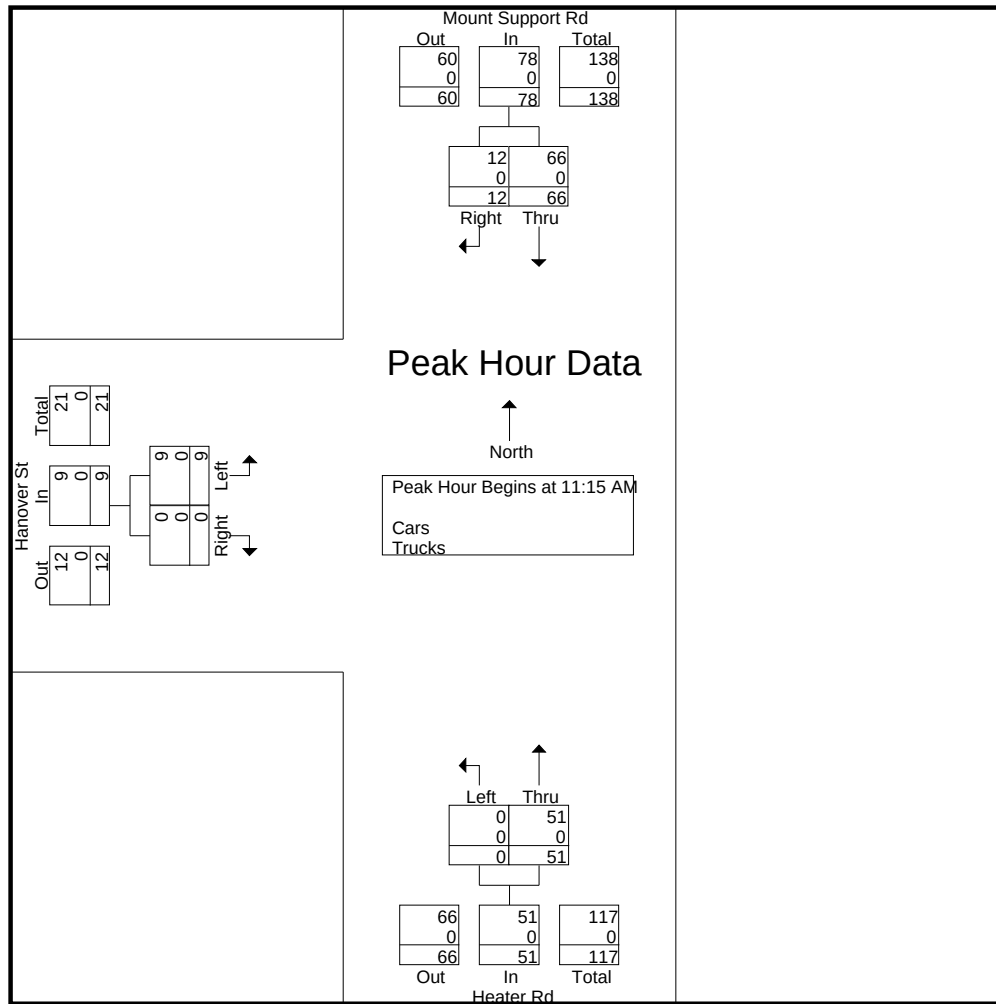
|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 11:15 AM                                                   | 16                             | 1     | 17         | 0                       | 20   | 20         | 3                       | 0     | 3          | 40         |
| 11:30 AM                                                   | 15                             | 3     | 18         | 0                       | 13   | 13         | 3                       | 0     | 3          | 34         |
| 11:45 AM                                                   | 17                             | 5     | 22         | 0                       | 5    | 5          | 0                       | 0     | 0          | 27         |
| 12:00 PM                                                   | 18                             | 3     | 21         | 0                       | 13   | 13         | 3                       | 0     | 3          | 37         |
| Total Volume                                               | 66                             | 12    | 78         | 0                       | 51   | 51         | 9                       | 0     | 9          | 138        |
| % App. Total                                               | 84.6                           | 15.4  |            | 0                       | 100  |            | 100                     | 0     |            |            |
| PHF                                                        | .917                           | .600  | .886       | .000                    | .638 | .638       | .750                    | .000  | .750       | .863       |
| Cars                                                       | 66                             | 12    | 78         | 0                       | 51   | 51         | 9                       | 0     | 9          | 138        |
| % Cars                                                     | 100                            | 100   | 100        | 0                       | 100  | 100        | 100                     | 0     | 100        | 100        |
| Trucks                                                     | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| % Trucks                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

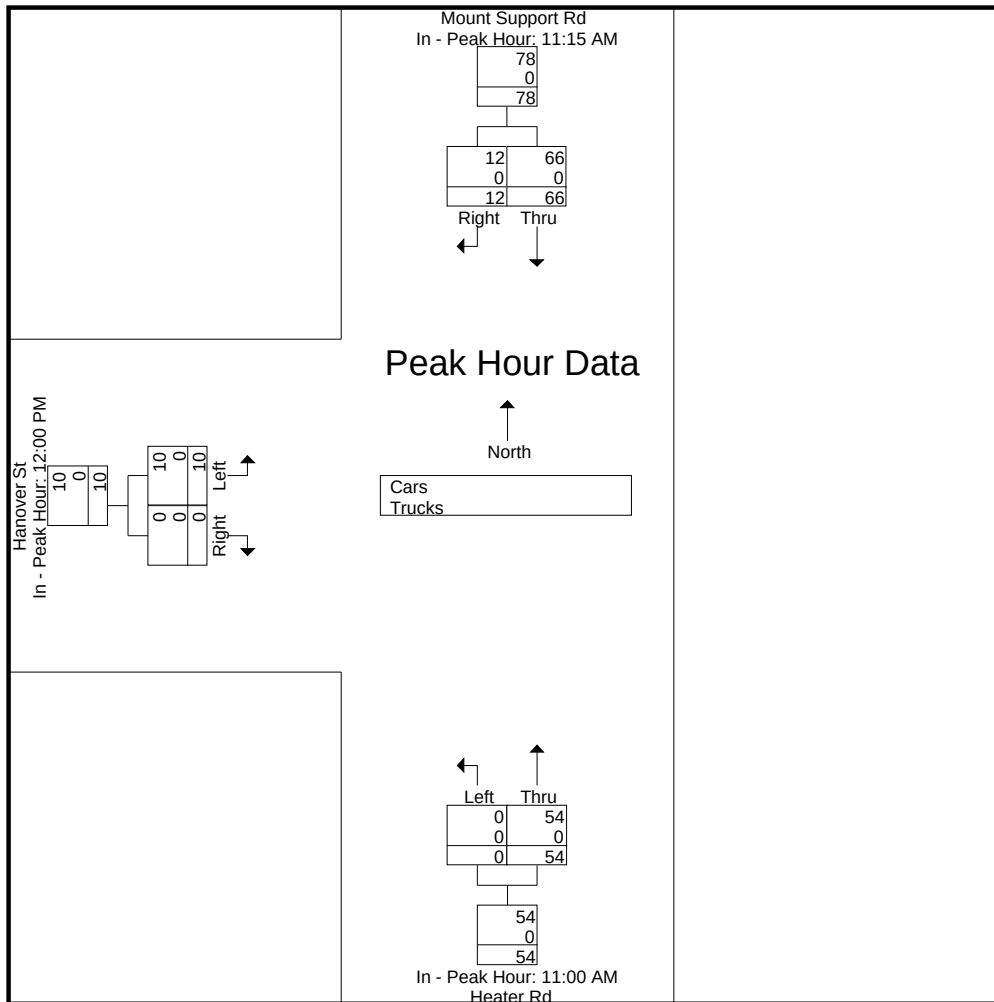
|              | 11:15 AM |      |      | 11:00 AM |      |      | 12:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 16       | 1    | 17   | 0        | 16   | 16   | 3        | 0    | 3    |
| +15 mins.    | 15       | 3    | 18   | 0        | 20   | 20   | 2        | 0    | 2    |
| +30 mins.    | 17       | 5    | 22   | 0        | 13   | 13   | 3        | 0    | 3    |
| +45 mins.    | 18       | 3    | 21   | 0        | 5    | 5    | 2        | 0    | 2    |
| Total Volume | 66       | 12   | 78   | 0        | 54   | 54   | 10       | 0    | 10   |
| % App. Total | 84.6     | 15.4 |      | 0        | 100  |      | 100      | 0    |      |
| PHF          | .917     | .600 | .886 | .000     | .675 | .675 | .833     | .000 | .833 |
| Cars         | 66       | 12   | 78   | 0        | 54   | 54   | 10       | 0    | 10   |
| % Cars       | 100      | 100  | 100  | 0        | 100  | 100  | 100      | 0    | 100  |
| Trucks       | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % Trucks     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S3  
 Site Code : 52933003  
 Start Date : 11/12/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 4

## Groups Printed- Cars

|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 11:00 AM    | 11                             | 1     | 0                       | 16   | 1                       | 0     | 29         |
| 11:15 AM    | 16                             | 1     | 0                       | 20   | 3                       | 0     | 40         |
| 11:30 AM    | 15                             | 3     | 0                       | 13   | 3                       | 0     | 34         |
| 11:45 AM    | 17                             | 5     | 0                       | 5    | 0                       | 0     | 27         |
| Total       | 59                             | 10    | 0                       | 54   | 7                       | 0     | 130        |
| 12:00 PM    | 18                             | 3     | 0                       | 13   | 3                       | 0     | 37         |
| 12:15 PM    | 12                             | 3     | 1                       | 9    | 2                       | 0     | 27         |
| 12:30 PM    | 18                             | 0     | 0                       | 10   | 3                       | 0     | 31         |
| 12:45 PM    | 11                             | 0     | 0                       | 14   | 2                       | 0     | 27         |
| Total       | 59                             | 6     | 1                       | 46   | 10                      | 0     | 122        |
| Grand Total | 118                            | 16    | 1                       | 100  | 17                      | 0     | 252        |
| Apprch %    | 88.1                           | 11.9  | 1                       | 99   | 100                     | 0     |            |
| Total %     | 46.8                           | 6.3   | 0.4                     | 39.7 | 6.7                     | 0     |            |

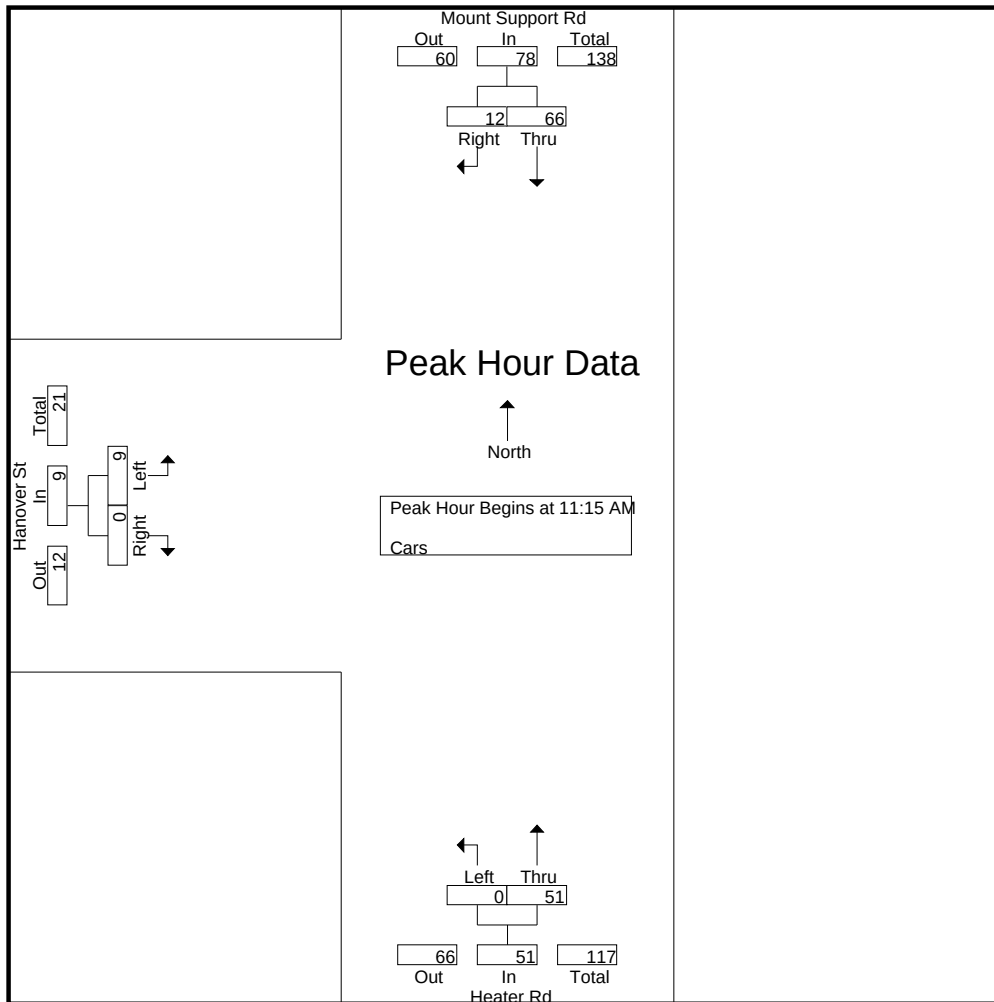
|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 11:15 AM                                                   | 16                             | 1     | 17         | 0                       | 20   | 20         | 3                       | 0     | 3          | 40         |
| 11:30 AM                                                   | 15                             | 3     | 18         | 0                       | 13   | 13         | 3                       | 0     | 3          | 34         |
| 11:45 AM                                                   | 17                             | 5     | 22         | 0                       | 5    | 5          | 0                       | 0     | 0          | 27         |
| 12:00 PM                                                   | 18                             | 3     | 21         | 0                       | 13   | 13         | 3                       | 0     | 3          | 37         |
| Total Volume                                               | 66                             | 12    | 78         | 0                       | 51   | 51         | 9                       | 0     | 9          | 138        |
| % App. Total                                               | 84.6                           | 15.4  |            | 0                       | 100  |            | 100                     | 0     |            |            |
| PHF                                                        | .917                           | .600  | .886       | .000                    | .638 | .638       | .750                    | .000  | .750       | .863       |

# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
 E/W Street : Hanover Street  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S3  
 Site Code : 52933003  
 Start Date : 11/12/2022  
 Page No : 5

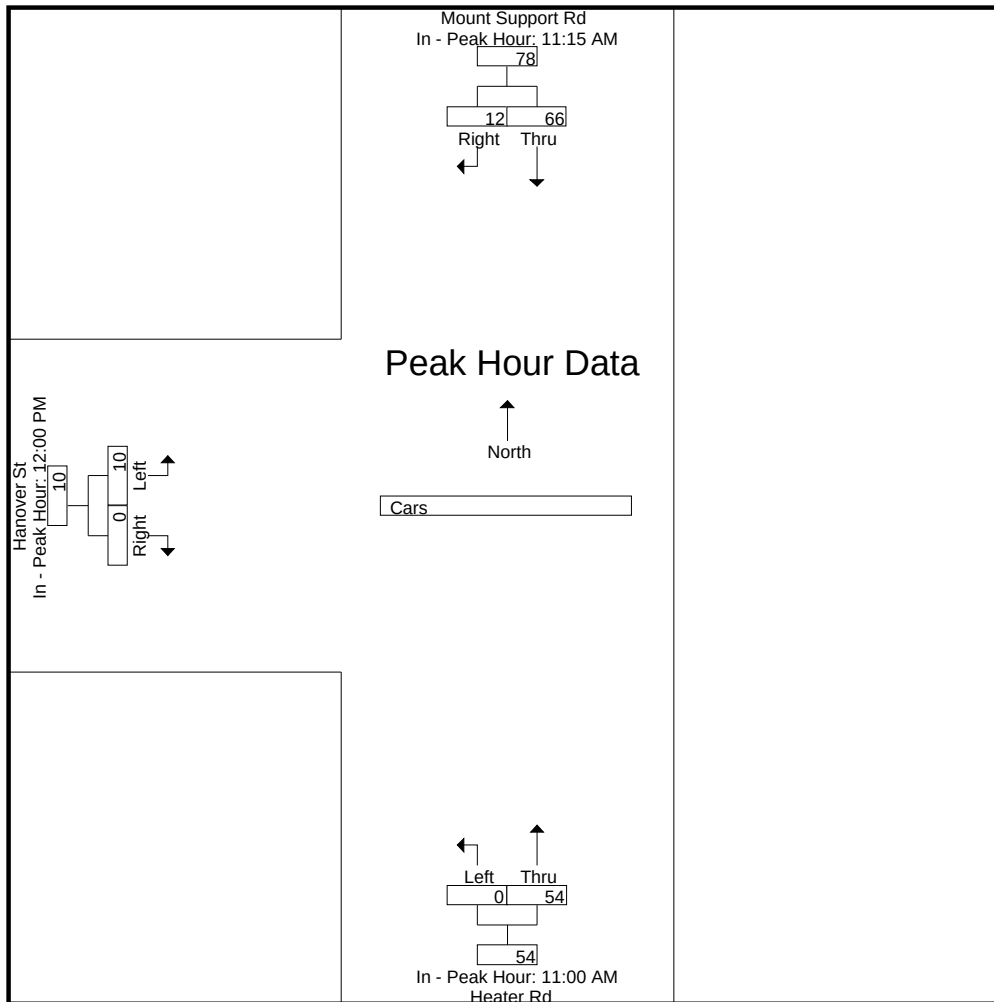


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:15 AM  |          |           | 11:00 AM |           |           | 12:00 PM |      |          |
|--------------|-----------|----------|-----------|----------|-----------|-----------|----------|------|----------|
| +0 mins.     | 16        | 1        | 17        | 0        | 16        | 16        | <b>3</b> | 0    | <b>3</b> |
| +15 mins.    | 15        | 3        | 18        | 0        | <b>20</b> | <b>20</b> | 2        | 0    | 2        |
| +30 mins.    | 17        | <b>5</b> | <b>22</b> | 0        | 13        | 13        | 3        | 0    | 3        |
| +45 mins.    | <b>18</b> | 3        | 21        | 0        | 5         | 5         | 2        | 0    | 2        |
| Total Volume | 66        | 12       | 78        | 0        | 54        | 54        | 10       | 0    | 10       |
| % App. Total | 84.6      | 15.4     |           | 0        | 100       |           | 100      | 0    |          |
| PHF          | .917      | .600     | .886      | .000     | .675      | .675      | .833     | .000 | .833     |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 7

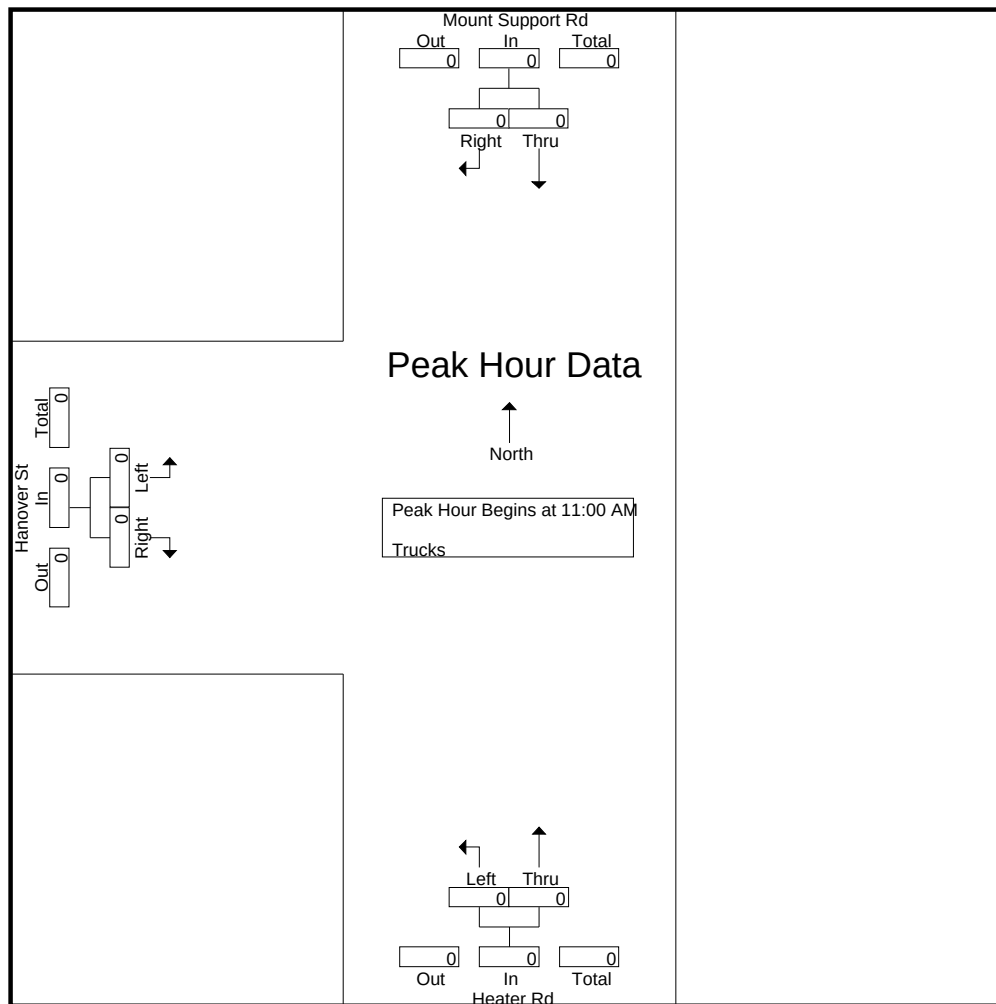
## Groups Printed- Trucks

|             | Mount Support Rd<br>From North |       | Heater Rd<br>From South |      | Hanover St<br>From West |       |            |
|-------------|--------------------------------|-------|-------------------------|------|-------------------------|-------|------------|
| Start Time  | Thru                           | Right | Left                    | Thru | Left                    | Right | Int. Total |
| 11:00 AM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 11:15 AM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 11:30 AM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 11:45 AM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| Total       | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 12:00 PM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 12:15 PM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 12:30 PM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| 12:45 PM    | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| Total       | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| Grand Total | 0                              | 0     | 0                       | 0    | 0                       | 0     | 0          |
| Apprch %    | 0                              | 0     | 0                       | 0    | 0                       | 0     |            |
| Total %     |                                |       |                         |      |                         |       |            |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 11:00 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| Total Volume                                               | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| % App. Total                                               | 0                              | 0     |            | 0                       | 0    |            | 0                       | 0     |            |            |
| PHF                                                        | .000                           | .000  | .000       | .000                    | .000 | .000       | .000                    | .000  | .000       | .000       |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 8

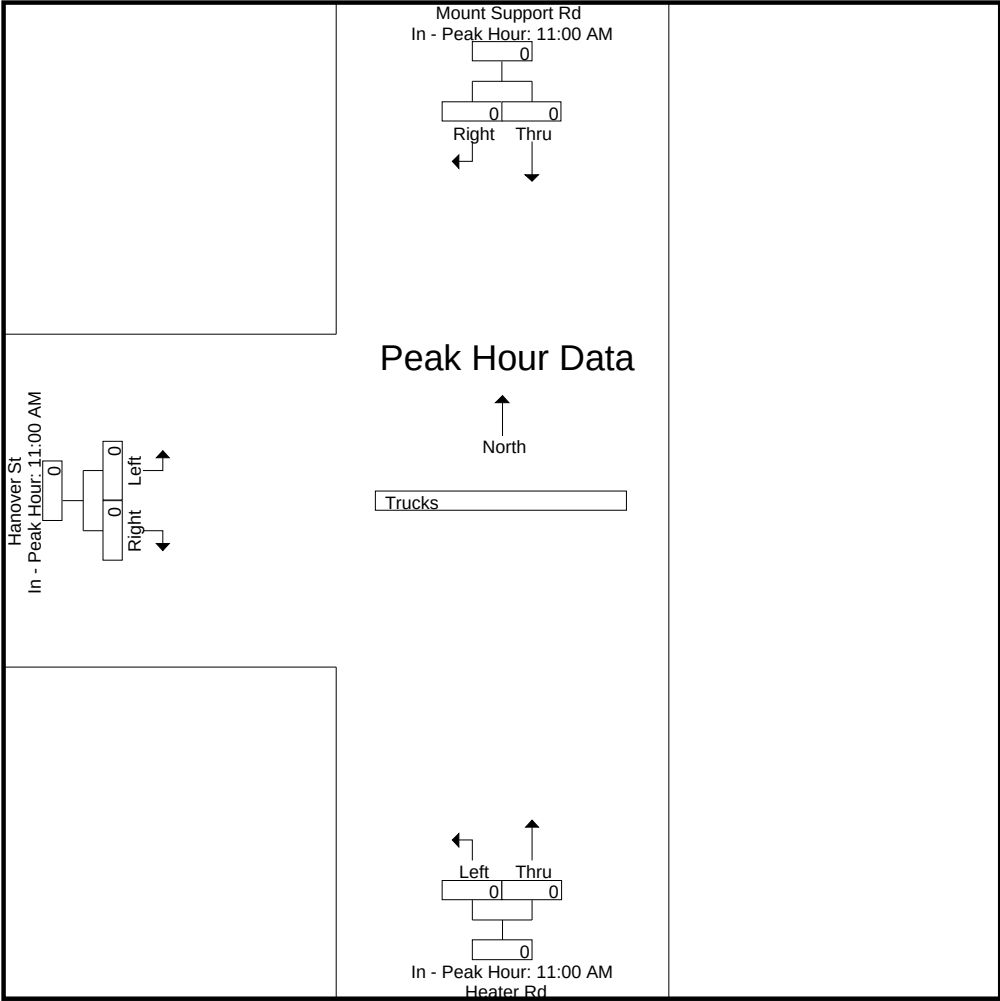


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 0    |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .000 | .000 | .000     | .000 | .000 |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Mount Support Rd/Heater Rd

E/W Street : Hanover Street

City/State : Lebanon, NH

Weather : Clear

File Name : 529330S3

Site Code : 52933003

Start Date : 11/12/2022

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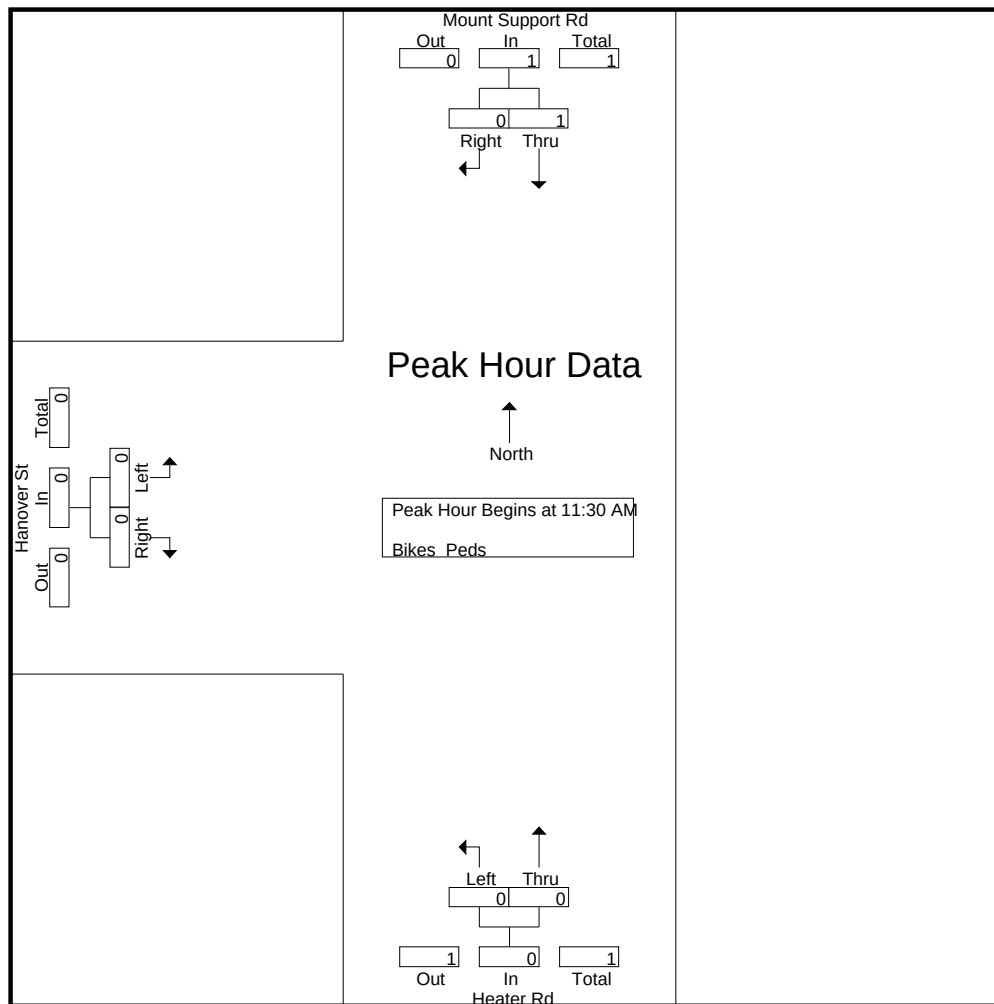
## Groups Printed- Bikes Peds

|             | Mount Support Rd<br>From North |       |      | Heater Rd<br>From South |      |      | Hanover St<br>From West |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|--------------------------------|-------|------|-------------------------|------|------|-------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Thru                           | Right | Peds | Left                    | Thru | Peds | Left                    | Right | Peds |              |              |            |
| 11:00 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 11:15 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 3    | 3            | 0            | 3          |
| 11:30 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 11:45 AM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 3    | 3            | 0            | 3          |
| 12:00 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 12:15 PM    | 1                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 1            | 1          |
| 12:30 PM    | 0                              | 0     | 0    | 0                       | 0    | 0    | 0                       | 0     | 0    | 0            | 0            | 0          |
| 12:45 PM    | 0                              | 0     | 1    | 0                       | 0    | 0    | 0                       | 0     | 0    | 1            | 0            | 1          |
| Total       | 1                              | 0     | 1    | 0                       | 0    | 0    | 0                       | 0     | 0    | 1            | 1            | 2          |
| Grand Total | 1                              | 0     | 1    | 0                       | 0    | 0    | 0                       | 0     | 3    | 4            | 1            | 5          |
| Apprch %    | 100                            | 0     |      | 0                       | 0    |      | 0                       | 0     |      |              |              |            |
| Total %     | 100                            | 0     |      | 0                       | 0    |      | 0                       | 0     |      | 80           | 20           |            |

|                                                            | Mount Support Rd<br>From North |       |            | Heater Rd<br>From South |      |            | Hanover St<br>From West |       |            |            |
|------------------------------------------------------------|--------------------------------|-------|------------|-------------------------|------|------------|-------------------------|-------|------------|------------|
| Start Time                                                 | Thru                           | Right | App. Total | Left                    | Thru | App. Total | Left                    | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                                |       |            |                         |      |            |                         |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:30 AM       |                                |       |            |                         |      |            |                         |       |            |            |
| 11:30 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 12:00 PM                                                   | 0                              | 0     | 0          | 0                       | 0    | 0          | 0                       | 0     | 0          | 0          |
| 12:15 PM                                                   | 1                              | 0     | 1          | 0                       | 0    | 0          | 0                       | 0     | 0          | 1          |
| Total Volume                                               | 1                              | 0     | 1          | 0                       | 0    | 0          | 0                       | 0     | 0          | 1          |
| % App. Total                                               | 100                            | 0     |            | 0                       | 0    |            | 0                       | 0     |            |            |
| PHF                                                        | .250                           | .000  | .250       | .000                    | .000 | .000       | .000                    | .000  | .000       | .250       |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 11

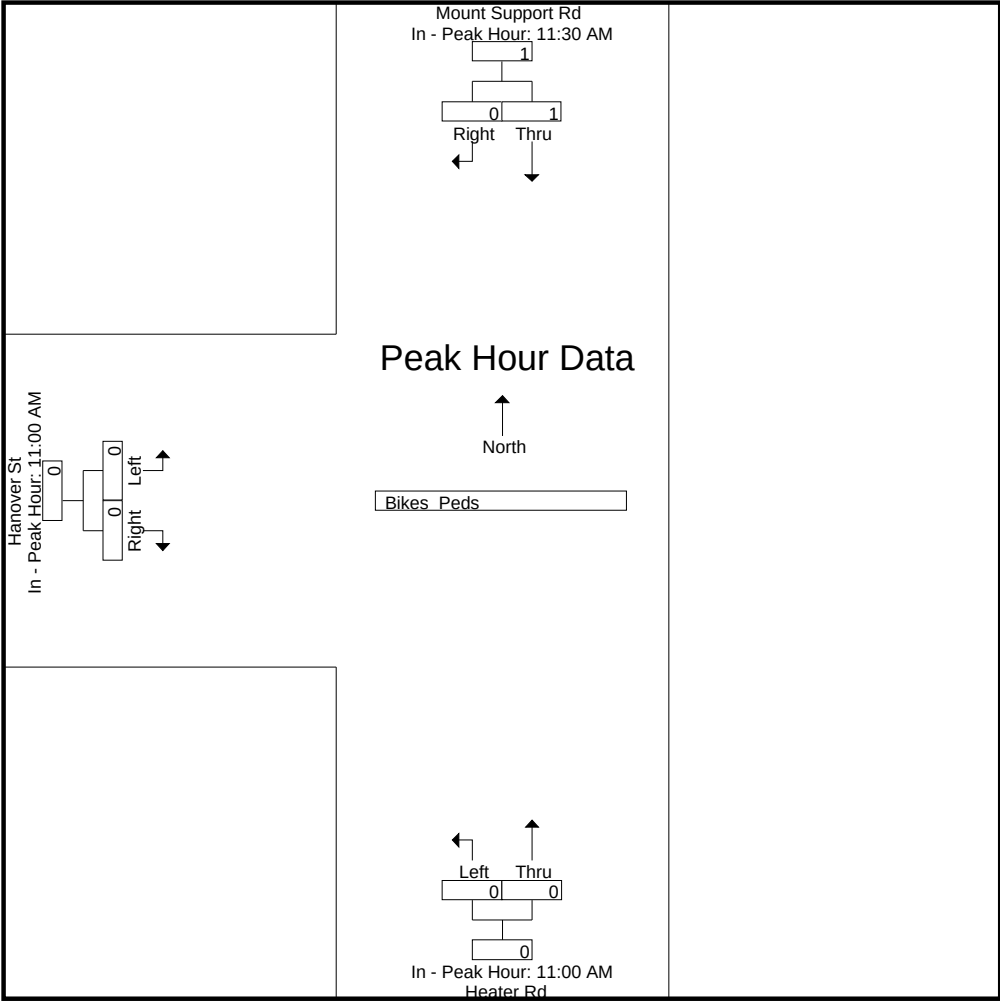


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:30 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 1        | 0    | 1    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 1        | 0    | 1    | 0        | 0    | 0    | 0        | 0    | 0    |
| % App. Total | 100      | 0    |      | 0        | 0    |      | 0        | 0    |      |
| PHF          | .250     | .000 | .250 | .000     | .000 | .000 | .000     | .000 | .000 |

N/S Street : Mount Support Rd/Heater Rd  
E/W Street : Hanover Street  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S3  
Site Code : 52933003  
Start Date : 11/12/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 07:00 AM    | 2                       | 13   | 0     | 14                       | 6    | 8     | 16                      | 19   | 13    | 0                        | 5    | 10    | 106        |
| 07:15 AM    | 3                       | 23   | 1     | 17                       | 14   | 5     | 25                      | 25   | 8     | 1                        | 15   | 28    | 165        |
| 07:30 AM    | 1                       | 19   | 0     | 12                       | 9    | 9     | 6                       | 25   | 8     | 1                        | 15   | 13    | 118        |
| 07:45 AM    | 9                       | 29   | 0     | 15                       | 11   | 10    | 17                      | 26   | 5     | 0                        | 15   | 18    | 155        |
| Total       | 15                      | 84   | 1     | 58                       | 40   | 32    | 64                      | 95   | 34    | 2                        | 50   | 69    | 544        |
| 08:00 AM    | 6                       | 9    | 0     | 11                       | 5    | 8     | 1                       | 23   | 11    | 0                        | 9    | 11    | 94         |
| 08:15 AM    | 2                       | 20   | 0     | 10                       | 3    | 4     | 1                       | 18   | 9     | 0                        | 4    | 6     | 77         |
| 08:30 AM    | 4                       | 14   | 0     | 14                       | 0    | 6     | 1                       | 14   | 13    | 0                        | 4    | 4     | 74         |
| 08:45 AM    | 2                       | 16   | 1     | 12                       | 2    | 6     | 3                       | 16   | 5     | 0                        | 2    | 1     | 66         |
| Total       | 14                      | 59   | 1     | 47                       | 10   | 24    | 6                       | 71   | 38    | 0                        | 19   | 22    | 311        |
| Grand Total | 29                      | 143  | 2     | 105                      | 50   | 56    | 70                      | 166  | 72    | 2                        | 69   | 91    | 855        |
| Apprch %    | 16.7                    | 82.2 | 1.1   | 49.8                     | 23.7 | 26.5  | 22.7                    | 53.9 | 23.4  | 1.2                      | 42.6 | 56.2  |            |
| Total %     | 3.4                     | 16.7 | 0.2   | 12.3                     | 5.8  | 6.5   | 8.2                     | 19.4 | 8.4   | 0.2                      | 8.1  | 10.6  |            |
| Cars        | 29                      | 131  | 2     | 104                      | 49   | 56    | 70                      | 155  | 72    | 2                        | 69   | 84    | 823        |
| % Cars      | 100                     | 91.6 | 100   | 99                       | 98   | 100   | 100                     | 93.4 | 100   | 100                      | 100  | 92.3  | 96.3       |
| Trucks      | 0                       | 12   | 0     | 1                        | 1    | 0     | 0                       | 11   | 0     | 0                        | 0    | 7     | 32         |
| % Trucks    | 0                       | 8.4  | 0     | 1                        | 2    | 0     | 0                       | 6.6  | 0     | 0                        | 0    | 7.7   | 3.7        |

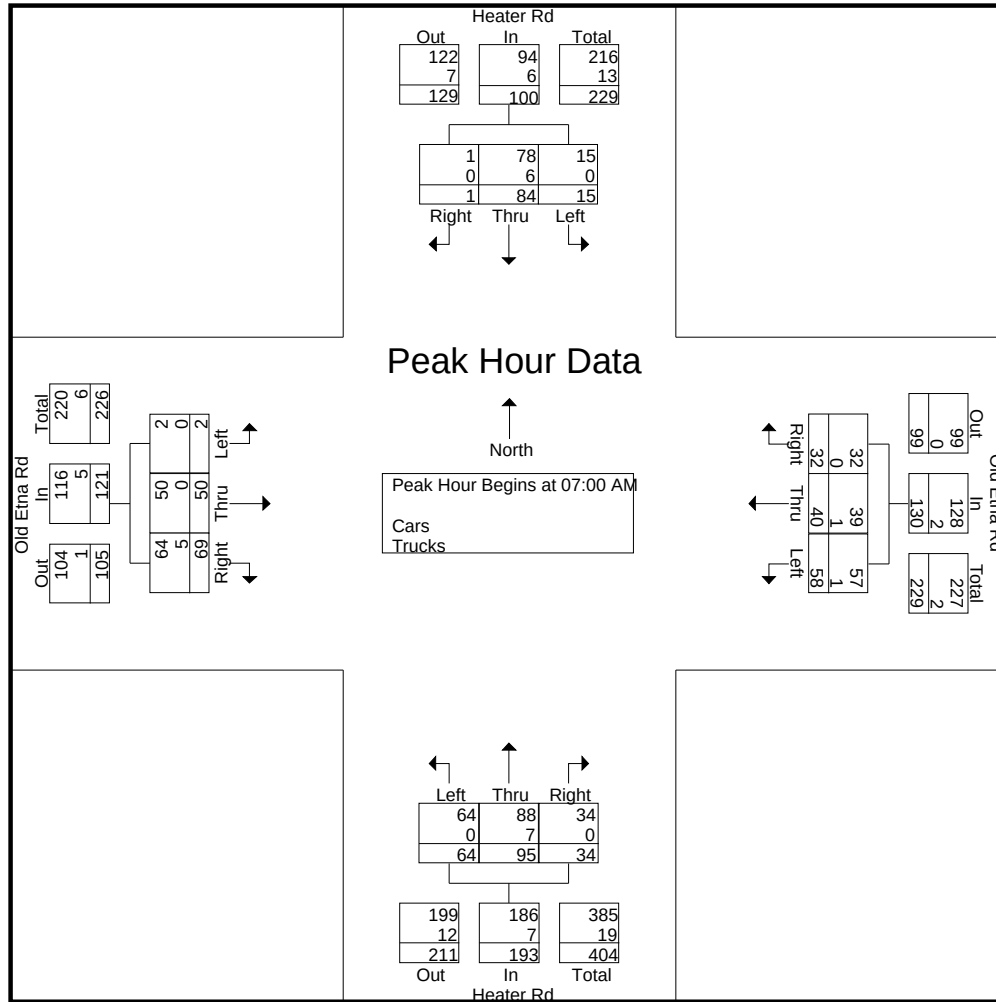
|                                                            | Heater Rd<br>From North |           |          |            | Old Etna Rd<br>From East |           |           |            | Heater Rd<br>From South |           |           |            | Old Etna Rd<br>From West |           |           |            |            |
|------------------------------------------------------------|-------------------------|-----------|----------|------------|--------------------------|-----------|-----------|------------|-------------------------|-----------|-----------|------------|--------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Left                    | Thru      | Right    | App. Total | Left                     | Thru      | Right     | App. Total | Left                    | Thru      | Right     | App. Total | Left                     | Thru      | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |           |          |            |                          |           |           |            |                         |           |           |            |                          |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |           |          |            |                          |           |           |            |                         |           |           |            |                          |           |           |            |            |
| 07:00 AM                                                   | 2                       | 13        | 0        | 15         | 14                       | 6         | 8         | 28         | 16                      | 19        | <b>13</b> | 48         | 0                        | 5         | 10        | 15         | 106        |
| 07:15 AM                                                   | 3                       | 23        | <b>1</b> | 27         | <b>17</b>                | <b>14</b> | 5         | <b>36</b>  | <b>25</b>               | 25        | 8         | <b>58</b>  | <b>1</b>                 | <b>15</b> | <b>28</b> | <b>44</b>  | <b>165</b> |
| 07:30 AM                                                   | 1                       | 19        | 0        | 20         | 12                       | 9         | 9         | 30         | 6                       | 25        | 8         | 39         | 1                        | 15        | 13        | 29         | 118        |
| 07:45 AM                                                   | <b>9</b>                | <b>29</b> | 0        | <b>38</b>  | 15                       | 11        | <b>10</b> | 36         | 17                      | <b>26</b> | 5         | 48         | 0                        | 15        | 18        | 33         | 155        |
| Total Volume                                               | 15                      | 84        | 1        | 100        | 58                       | 40        | 32        | 130        | 64                      | 95        | 34        | 193        | 2                        | 50        | 69        | 121        | 544        |
| % App. Total                                               | 15                      | 84        | 1        |            | 44.6                     | 30.8      | 24.6      |            | 33.2                    | 49.2      | 17.6      |            | 1.7                      | 41.3      | 57        |            |            |
| PHF                                                        | .417                    | .724      | .250     | .658       | .853                     | .714      | .800      | .903       | .640                    | .913      | .654      | .832       | .500                     | .833      | .616      | .688       | .824       |
| Cars                                                       | 15                      | 78        | 1        | 94         | 57                       | 39        | 32        | 128        | 64                      | 88        | 34        | 186        | 2                        | 50        | 64        | 116        | 524        |
| % Cars                                                     | 100                     | 92.9      | 100      | 94.0       | 98.3                     | 97.5      | 100       | 98.5       | 100                     | 92.6      | 100       | 96.4       | 100                      | 100       | 92.8      | 95.9       | 96.3       |
| Trucks                                                     | 0                       | 6         | 0        | 6          | 1                        | 1         | 0         | 2          | 0                       | 7         | 0         | 7          | 0                        | 0         | 5         | 5          | 20         |
| % Trucks                                                   | 0                       | 7.1       | 0        | 6.0        | 1.7                      | 2.5       | 0         | 1.5        | 0                       | 7.4       | 0         | 3.6        | 0                        | 0         | 7.2       | 4.1        | 3.7        |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 2

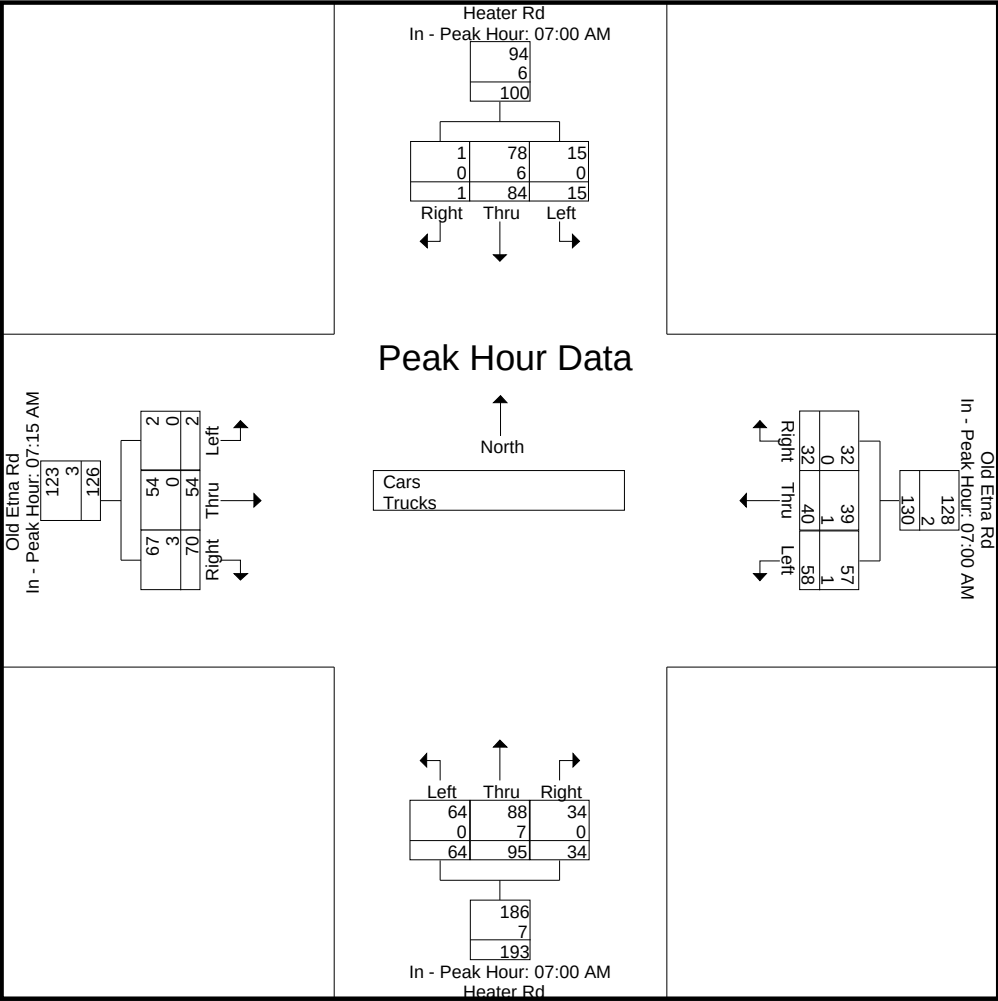


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:00 AM |           |          |           | 07:00 AM  |           |           |           | 07:00 AM  |           |           |           | 07:15 AM |           |           |           |
|--------------|----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|
| +0 mins.     | 2        | 13        | 0        | 15        | 14        | 6         | 8         | 28        | 16        | 19        | <b>13</b> | 48        | <b>1</b> | <b>15</b> | <b>28</b> | <b>44</b> |
| +15 mins.    | 3        | 23        | <b>1</b> | 27        | <b>17</b> | <b>14</b> | 5         | <b>36</b> | <b>25</b> | 25        | 8         | <b>58</b> | 1        | 15        | 13        | 29        |
| +30 mins.    | 1        | 19        | 0        | 20        | 12        | 9         | 9         | 30        | 6         | 25        | 8         | 39        | 0        | 15        | 18        | 33        |
| +45 mins.    | <b>9</b> | <b>29</b> | 0        | <b>38</b> | 15        | 11        | <b>10</b> | 36        | 17        | <b>26</b> | 5         | 48        | 0        | 9         | 11        | 20        |
| Total Volume | 15       | 84        | 1        | 100       | 58        | 40        | 32        | 130       | 64        | 95        | 34        | 193       | 2        | 54        | 70        | 126       |
| % App. Total | 15       | 84        | 1        |           | 44.6      | 30.8      | 24.6      |           | 33.2      | 49.2      | 17.6      |           | 1.6      | 42.9      | 55.6      |           |
| PHF          | .417     | .724      | .250     | .658      | .853      | .714      | .800      | .903      | .640      | .913      | .654      | .832      | .500     | .900      | .625      | .716      |
| Cars         | 15       | 78        | 1        | 94        | 57        | 39        | 32        | 128       | 64        | 88        | 34        | 186       | 2        | 54        | 67        | 123       |
| % Cars       | 100      | 92.9      | 100      | 94        | 98.3      | 97.5      | 100       | 98.5      | 100       | 92.6      | 100       | 96.4      | 100      | 100       | 95.7      | 97.6      |
| Trucks       | 0        | 6         | 0        | 6         | 1         | 1         | 0         | 2         | 0         | 7         | 0         | 7         | 0        | 0         | 3         | 3         |
| % Trucks     | 0        | 7.1       | 0        | 6         | 1.7       | 2.5       | 0         | 1.5       | 0         | 7.4       | 0         | 3.6       | 0        | 0         | 4.3       | 2.4       |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 07:00 AM    | 2                       | 12   | 0     | 13                       | 6    | 8     | 16                      | 18   | 13    | 0                        | 5    | 7     | 100        |
| 07:15 AM    | 3                       | 22   | 1     | 17                       | 14   | 5     | 25                      | 23   | 8     | 1                        | 15   | 27    | 161        |
| 07:30 AM    | 1                       | 19   | 0     | 12                       | 9    | 9     | 6                       | 24   | 8     | 1                        | 15   | 13    | 117        |
| 07:45 AM    | 9                       | 25   | 0     | 15                       | 10   | 10    | 17                      | 23   | 5     | 0                        | 15   | 17    | 146        |
| Total       | 15                      | 78   | 1     | 57                       | 39   | 32    | 64                      | 88   | 34    | 2                        | 50   | 64    | 524        |
| 08:00 AM    | 6                       | 9    | 0     | 11                       | 5    | 8     | 1                       | 22   | 11    | 0                        | 9    | 10    | 92         |
| 08:15 AM    | 2                       | 17   | 0     | 10                       | 3    | 4     | 1                       | 17   | 9     | 0                        | 4    | 6     | 73         |
| 08:30 AM    | 4                       | 12   | 0     | 14                       | 0    | 6     | 1                       | 13   | 13    | 0                        | 4    | 3     | 70         |
| 08:45 AM    | 2                       | 15   | 1     | 12                       | 2    | 6     | 3                       | 15   | 5     | 0                        | 2    | 1     | 64         |
| Total       | 14                      | 53   | 1     | 47                       | 10   | 24    | 6                       | 67   | 38    | 0                        | 19   | 20    | 299        |
| Grand Total | 29                      | 131  | 2     | 104                      | 49   | 56    | 70                      | 155  | 72    | 2                        | 69   | 84    | 823        |
| Apprch %    | 17.9                    | 80.9 | 1.2   | 49.8                     | 23.4 | 26.8  | 23.6                    | 52.2 | 24.2  | 1.3                      | 44.5 | 54.2  |            |
| Total %     | 3.5                     | 15.9 | 0.2   | 12.6                     | 6    | 6.8   | 8.5                     | 18.8 | 8.7   | 0.2                      | 8.4  | 10.2  |            |

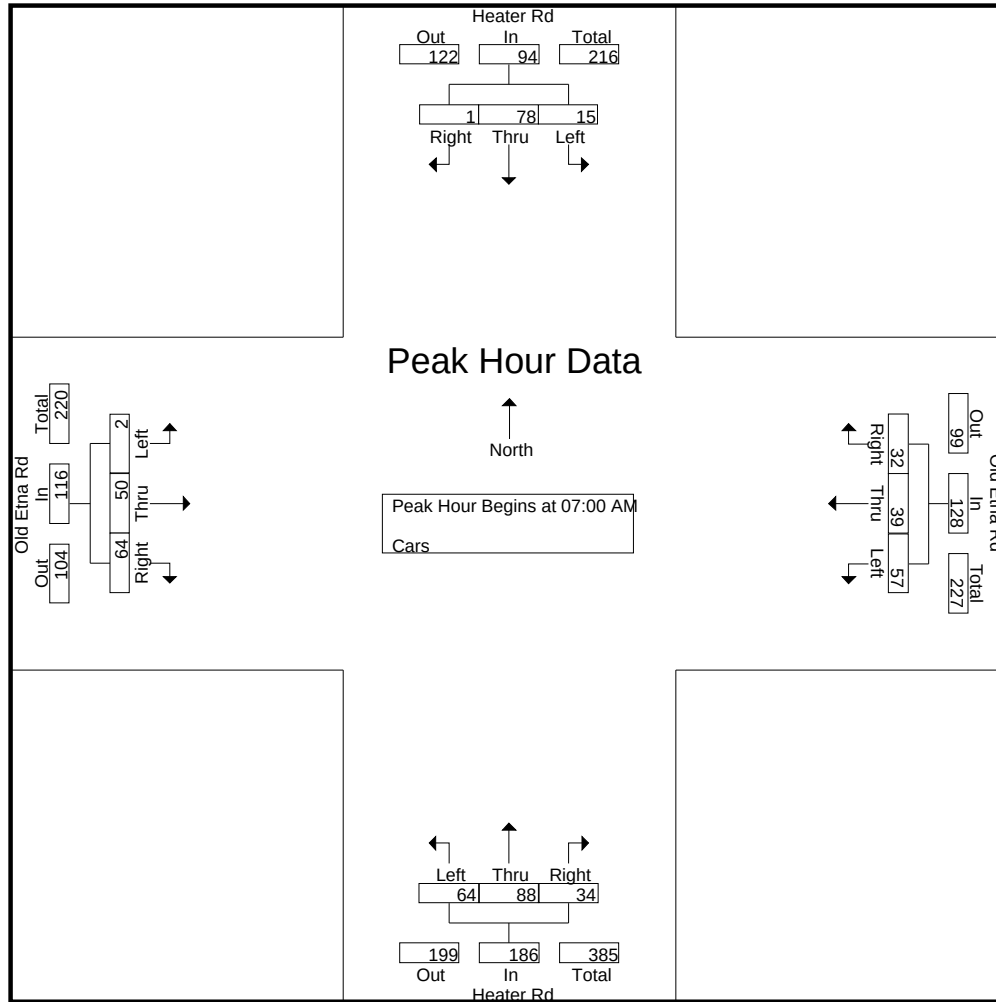
|                                                            | Heater Rd<br>From North |           |          |            | Old Etna Rd<br>From East |           |           |            | Heater Rd<br>From South |           |           |            | Old Etna Rd<br>From West |           |           |            |            |
|------------------------------------------------------------|-------------------------|-----------|----------|------------|--------------------------|-----------|-----------|------------|-------------------------|-----------|-----------|------------|--------------------------|-----------|-----------|------------|------------|
| Start Time                                                 | Left                    | Thru      | Right    | App. Total | Left                     | Thru      | Right     | App. Total | Left                    | Thru      | Right     | App. Total | Left                     | Thru      | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |           |          |            |                          |           |           |            |                         |           |           |            |                          |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |           |          |            |                          |           |           |            |                         |           |           |            |                          |           |           |            |            |
| 07:00 AM                                                   | 2                       | 12        | 0        | 14         | 13                       | 6         | 8         | 27         | 16                      | 18        | <b>13</b> | 47         | 0                        | 5         | 7         | 12         | 100        |
| 07:15 AM                                                   | 3                       | 22        | <b>1</b> | 26         | <b>17</b>                | <b>14</b> | 5         | <b>36</b>  | <b>25</b>               | 23        | 8         | <b>56</b>  | <b>1</b>                 | <b>15</b> | <b>27</b> | <b>43</b>  | <b>161</b> |
| 07:30 AM                                                   | 1                       | 19        | 0        | 20         | 12                       | 9         | 9         | 30         | 6                       | <b>24</b> | 8         | 38         | 1                        | 15        | 13        | 29         | 117        |
| 07:45 AM                                                   | <b>9</b>                | <b>25</b> | 0        | <b>34</b>  | 15                       | 10        | <b>10</b> | 35         | 17                      | 23        | 5         | 45         | 0                        | 15        | 17        | 32         | 146        |
| Total Volume                                               | 15                      | 78        | 1        | 94         | 57                       | 39        | 32        | 128        | 64                      | 88        | 34        | 186        | 2                        | 50        | 64        | 116        | 524        |
| % App. Total                                               | 16                      | 83        | 1.1      |            | 44.5                     | 30.5      | 25        |            | 34.4                    | 47.3      | 18.3      |            | 1.7                      | 43.1      | 55.2      |            |            |
| PHF                                                        | .417                    | .780      | .250     | .691       | .838                     | .696      | .800      | .889       | .640                    | .917      | .654      | .830       | .500                     | .833      | .593      | .674       | .814       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 5

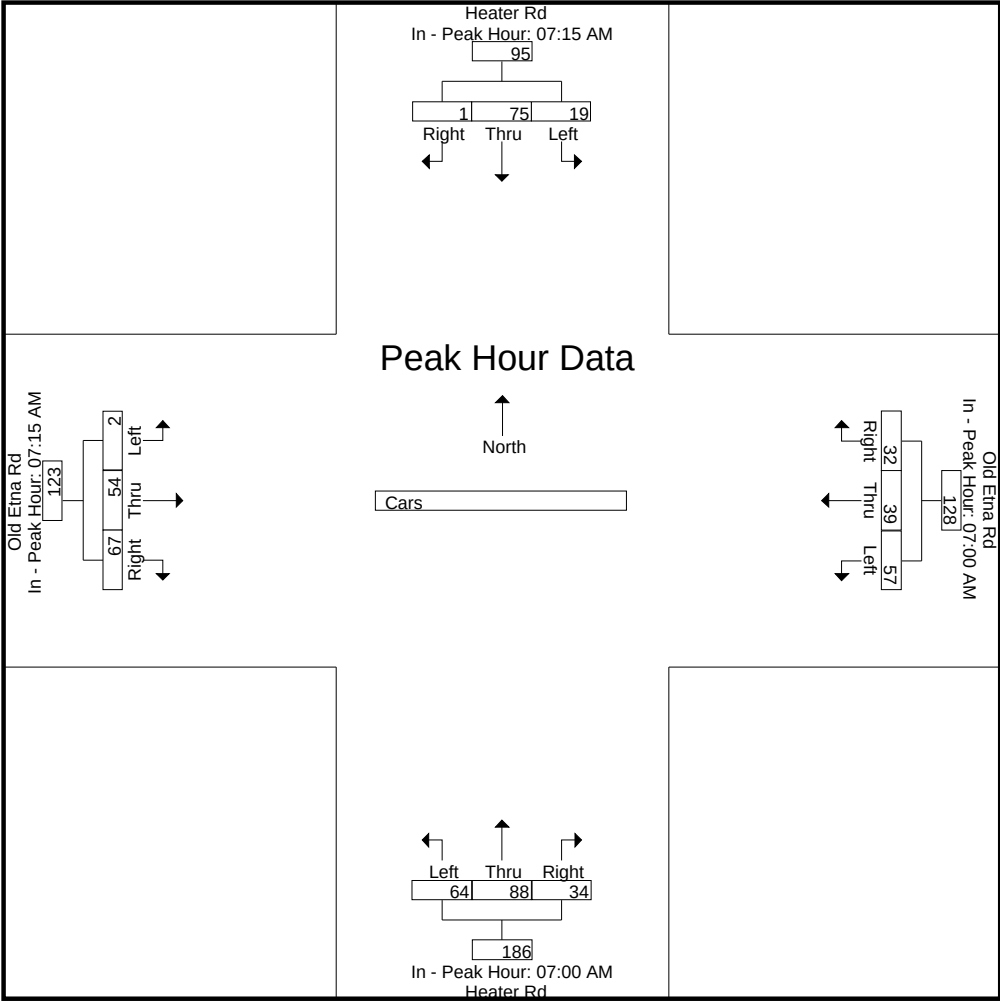


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:15 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:15 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 3        | 22   | 1    | 26   | 13       | 6    | 8    | 27   | 16       | 18   | 13   | 47   | 1        | 15   | 27   | 43   |
| +15 mins.    | 1        | 19   | 0    | 20   | 17       | 14   | 5    | 36   | 25       | 23   | 8    | 56   | 1        | 15   | 13   | 29   |
| +30 mins.    | 9        | 25   | 0    | 34   | 12       | 9    | 9    | 30   | 6        | 24   | 8    | 38   | 0        | 15   | 17   | 32   |
| +45 mins.    | 6        | 9    | 0    | 15   | 15       | 10   | 10   | 35   | 17       | 23   | 5    | 45   | 0        | 9    | 10   | 19   |
| Total Volume | 19       | 75   | 1    | 95   | 57       | 39   | 32   | 128  | 64       | 88   | 34   | 186  | 2        | 54   | 67   | 123  |
| % App. Total | 20       | 78.9 | 1.1  |      | 44.5     | 30.5 | 25   |      | 34.4     | 47.3 | 18.3 |      | 1.6      | 43.9 | 54.5 |      |
| PHF          | .528     | .750 | .250 | .699 | .838     | .696 | .800 | .889 | .640     | .917 | .654 | .830 | .500     | .900 | .620 | .715 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 07:00 AM    | 0                       | 1    | 0     | 1                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 3     | 6          |
| 07:15 AM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 2    | 0     | 0                        | 0    | 1     | 4          |
| 07:30 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 1          |
| 07:45 AM    | 0                       | 4    | 0     | 0                        | 1    | 0     | 0                       | 3    | 0     | 0                        | 0    | 1     | 9          |
| Total       | 0                       | 6    | 0     | 1                        | 1    | 0     | 0                       | 7    | 0     | 0                        | 0    | 5     | 20         |
| 08:00 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 1     | 2          |
| 08:15 AM    | 0                       | 3    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 4          |
| 08:30 AM    | 0                       | 2    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 1     | 4          |
| 08:45 AM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 2          |
| Total       | 0                       | 6    | 0     | 0                        | 0    | 0     | 0                       | 4    | 0     | 0                        | 0    | 2     | 12         |
| Grand Total | 0                       | 12   | 0     | 1                        | 1    | 0     | 0                       | 11   | 0     | 0                        | 0    | 7     | 32         |
| Apprch %    | 0                       | 100  | 0     | 50                       | 50   | 0     | 0                       | 100  | 0     | 0                        | 0    | 100   |            |
| Total %     | 0                       | 37.5 | 0     | 3.1                      | 3.1  | 0     | 0                       | 34.4 | 0     | 0                        | 0    | 21.9  |            |

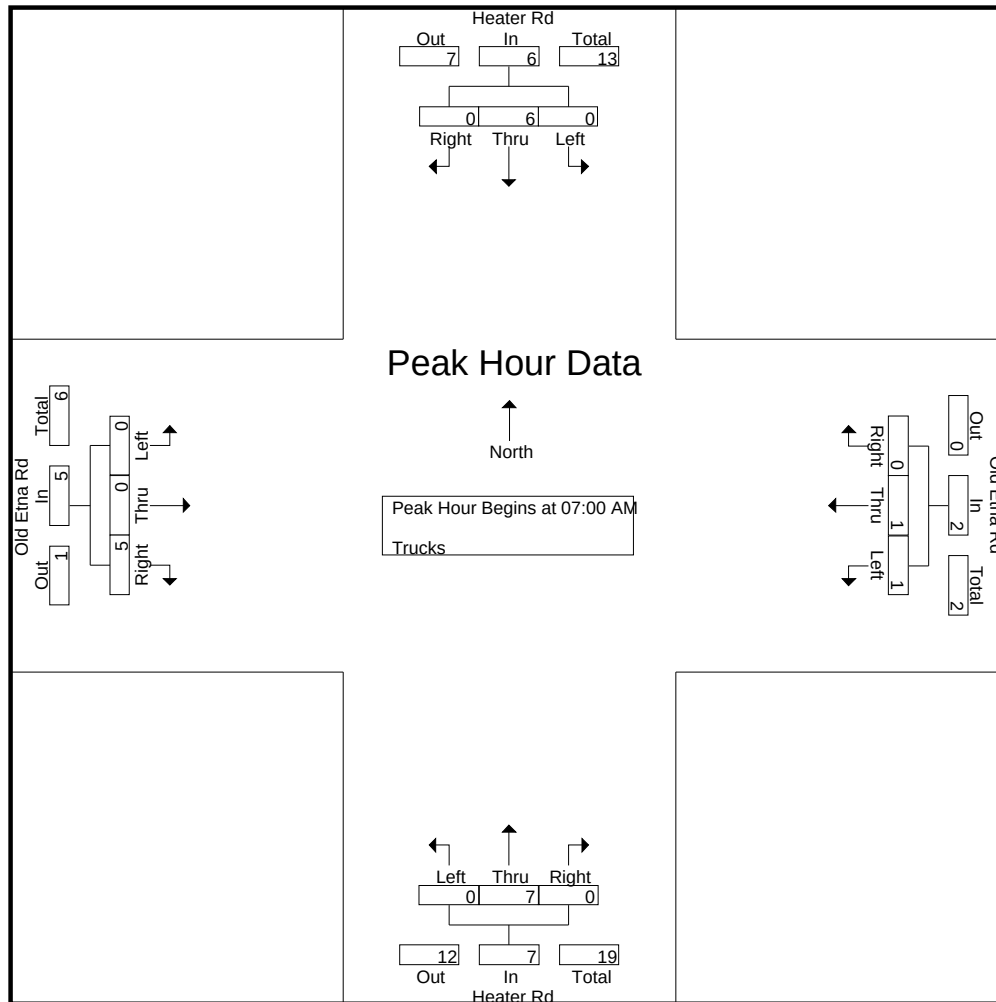
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            | Int. Total |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |            |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 07:00 AM                                                   | 0                       | 1    | 0     | 1          | 1                        | 0    | 0     | 1          | 0                       | 1    | 0     | 1          | 0                        | 0    | 3     | 3          | 6          |
| 07:15 AM                                                   | 0                       | 1    | 0     | 1          | 0                        | 0    | 0     | 0          | 0                       | 2    | 0     | 2          | 0                        | 0    | 1     | 1          | 4          |
| 07:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 1    | 0     | 1          | 0                        | 0    | 0     | 0          | 1          |
| 07:45 AM                                                   | 0                       | 4    | 0     | 4          | 0                        | 1    | 0     | 1          | 0                       | 3    | 0     | 3          | 0                        | 0    | 1     | 1          | 9          |
| Total Volume                                               | 0                       | 6    | 0     | 6          | 1                        | 1    | 0     | 2          | 0                       | 7    | 0     | 7          | 0                        | 0    | 5     | 5          | 20         |
| % App. Total                                               | 0                       | 100  | 0     |            | 50                       | 50   | 0     |            | 0                       | 100  | 0     |            | 0                        | 0    | 100   |            |            |
| PHF                                                        | .000                    | .375 | .000  | .375       | .250                     | .250 | .000  | .500       | .000                    | .583 | .000  | .583       | .000                     | .000 | .417  | .417       | .556       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 8

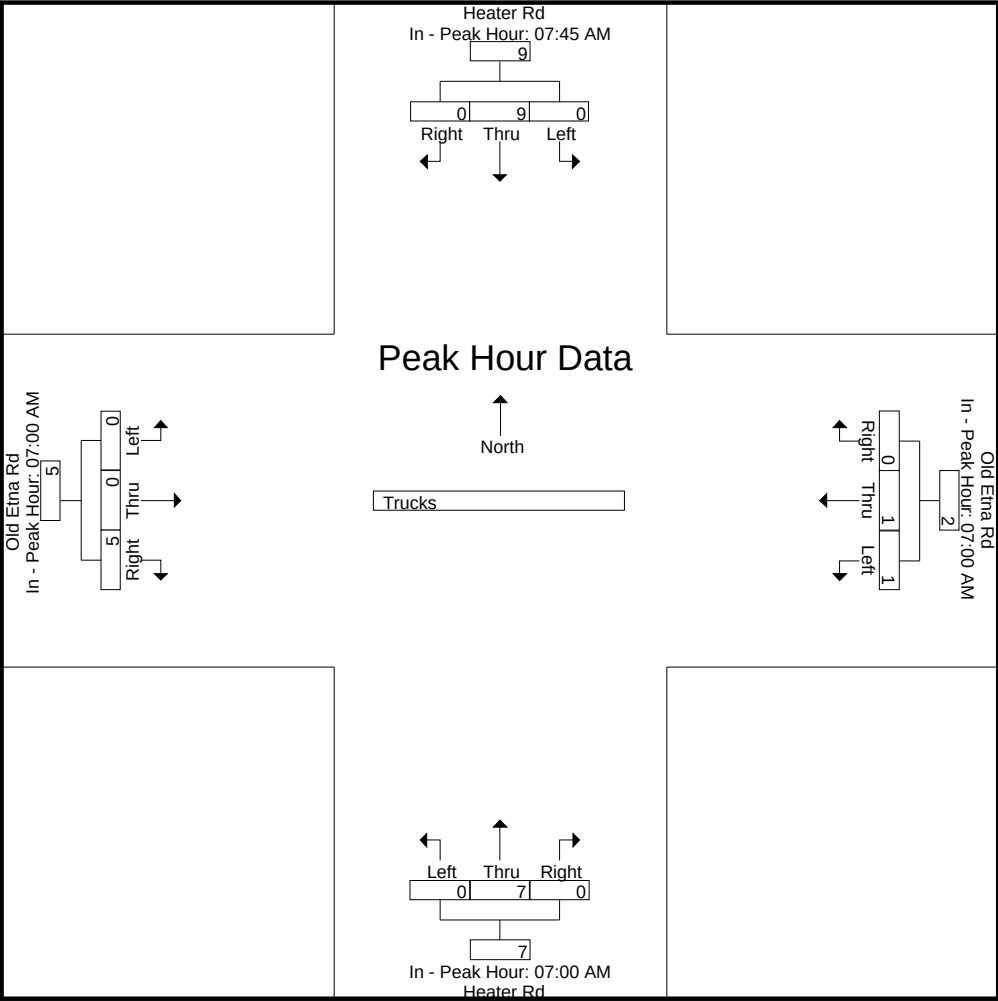


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:45 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 4    | 0    | 4    | 1        | 0    | 0    | 1    | 0        | 1    | 0    | 1    | 0        | 0    | 3    | 3    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    | 0        | 0    | 1    | 1    |
| +30 mins.    | 0        | 3    | 0    | 3    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 2    | 0    | 2    | 0        | 1    | 0    | 1    | 0        | 3    | 0    | 3    | 0        | 0    | 1    | 1    |
| Total Volume | 0        | 9    | 0    | 9    | 1        | 1    | 0    | 2    | 0        | 7    | 0    | 7    | 0        | 0    | 5    | 5    |
| % App. Total | 0        | 100  | 0    |      | 50       | 50   | 0    |      | 0        | 100  | 0    |      | 0        | 0    | 100  |      |
| PHF          | .000     | .563 | .000 | .563 | .250     | .250 | .000 | .500 | .000     | .583 | .000 | .583 | .000     | .000 | .417 | .417 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Heater Rd<br>From North |      |       |      | Old Etna Rd<br>From East |      |       |      | Heater Rd<br>From South |      |       |      | Old Etna Rd<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|--------------------------|------|-------|------|-------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds |              |              |            |
| 07:00 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 0    | 3            | 0            | 3          |
| 07:15 AM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 1    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 0    | 4            | 1            | 5          |
| 07:30 AM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 0    | 0                       | 0    | 0     | 4    | 0                        | 0    | 0     | 0    | 4            | 1            | 5          |
| 07:45 AM    | 0                       | 1    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 1            | 2          |
| Total       | 0                       | 1    | 0     | 0    | 0                        | 2    | 0     | 1    | 0                       | 0    | 0     | 11   | 0                        | 0    | 0     | 0    | 12           | 3            | 15         |
| 08:00 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 4    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 0    | 7            | 0            | 7          |
| 08:15 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 3    | 0                       | 0    | 0     | 2    | 0                        | 0    | 0     | 0    | 5            | 0            | 5          |
| 08:30 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| 08:45 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 7    | 0                       | 0    | 0     | 7    | 0                        | 0    | 0     | 0    | 14           | 0            | 14         |
| Grand Total | 0                       | 1    | 0     | 0    | 0                        | 2    | 0     | 8    | 0                       | 0    | 0     | 18   | 0                        | 0    | 0     | 0    | 26           | 3            | 29         |
| Apprch %    | 0                       | 100  | 0     |      | 0                        | 100  | 0     |      | 0                       | 0    | 0     |      | 0                        | 0    | 0     |      |              |              |            |
| Total %     | 0                       | 33.3 | 0     |      | 0                        | 66.7 | 0     |      | 0                       | 0    | 0     |      | 0                        | 0    | 0     |      | 89.7         | 10.3         |            |

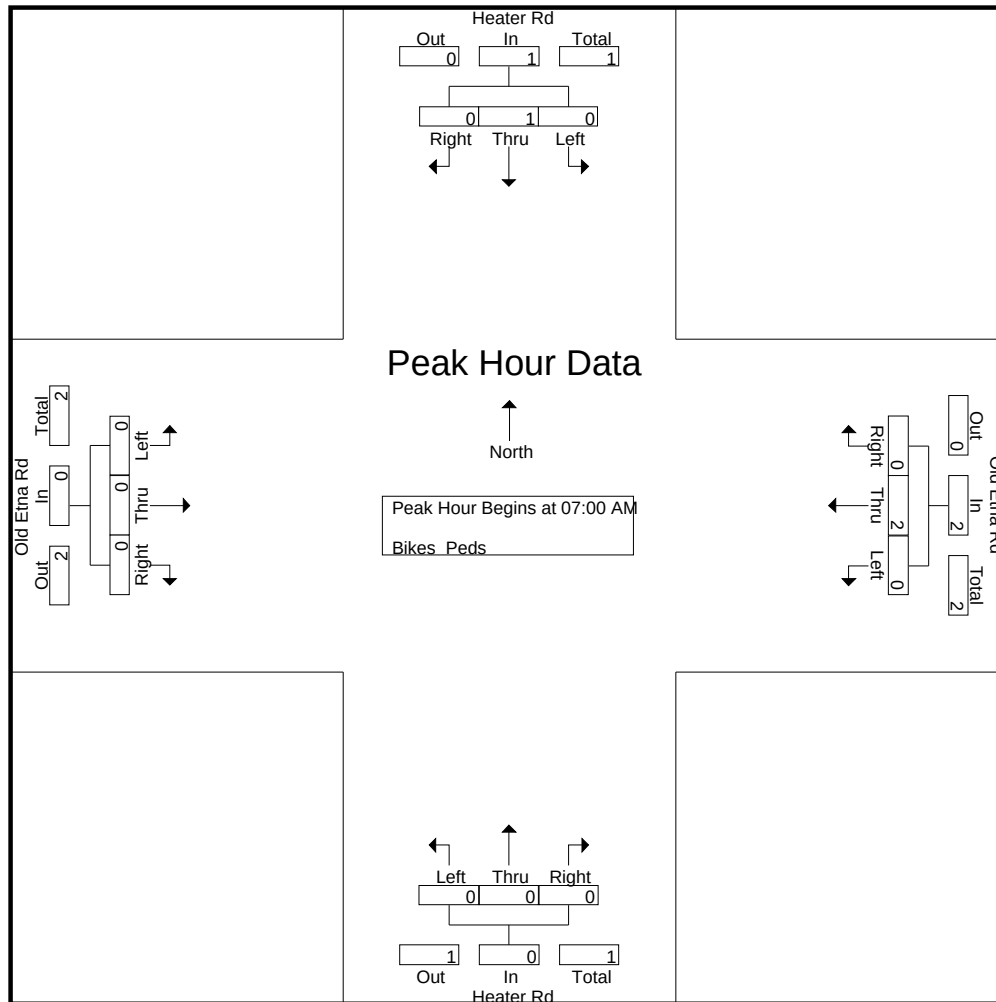
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |      |      |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|------|------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |      |      |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |      |      |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |      |      |
| 07:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0    | 0    |
| 07:15 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0    | 1    |
| 07:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0    | 1    |
| 07:45 AM                                                   | 0                       | 1    | 0     | 1          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0    | 1    |
| Total Volume                                               | 0                       | 1    | 0     | 1          | 0                        | 2    | 0     | 2          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0    | 3    |
| % App. Total                                               | 0                       | 100  | 0     |            | 0                        | 100  | 0     |            | 0                       | 0    | 0     |            | 0                        | 0    | 0     |            |            |      |      |
| PHF                                                        | .000                    | .250 | .000  | .250       | .000                     | .500 | .000  | .500       | .000                    | .000 | .000  | .000       | .000                     | .000 | .000  | .000       | .000       | .000 | .750 |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 11

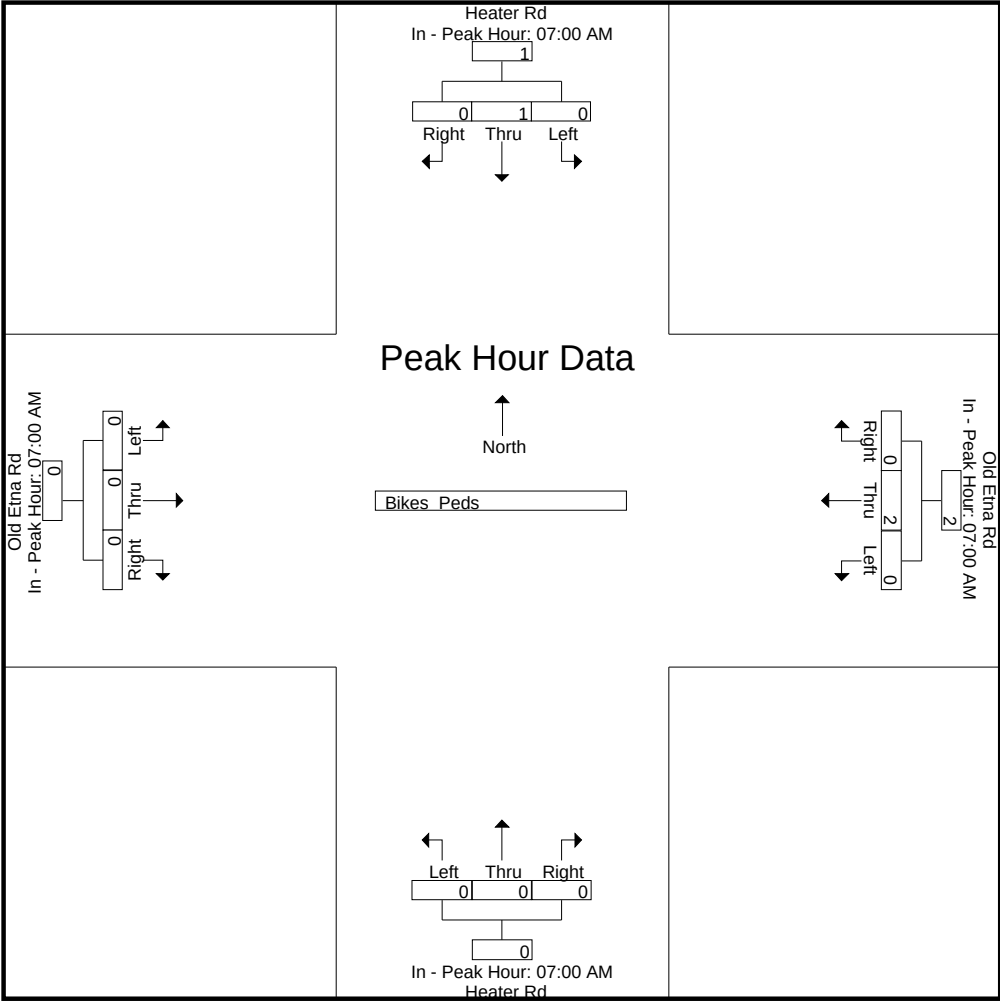


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 0        | 1    | 0    | 1    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| % App. Total | 0        | 100  | 0    |      | 0        | 100  | 0    |      | 0        | 0    | 0    |      | 0        | 0    | 0    |      |
| PHF          | .000     | .250 | .000 | .250 | .000     | .500 | .000 | .500 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 02:00 PM    | 2                       | 25   | 1     | 9                        | 3    | 1     | 5                       | 10   | 9     | 1                        | 2    | 20    | 88         |
| 02:15 PM    | 2                       | 23   | 0     | 15                       | 4    | 7     | 10                      | 19   | 6     | 0                        | 3    | 14    | 103        |
| 02:30 PM    | 3                       | 37   | 1     | 19                       | 6    | 4     | 11                      | 12   | 13    | 0                        | 4    | 23    | 133        |
| 02:45 PM    | 2                       | 28   | 0     | 15                       | 5    | 5     | 12                      | 11   | 14    | 0                        | 4    | 19    | 115        |
| Total       | 9                       | 113  | 2     | 58                       | 18   | 17    | 38                      | 52   | 42    | 1                        | 13   | 76    | 439        |
| 03:00 PM    | 3                       | 39   | 0     | 22                       | 9    | 6     | 10                      | 12   | 11    | 0                        | 13   | 56    | 181        |
| 03:15 PM    | 6                       | 31   | 0     | 14                       | 3    | 8     | 3                       | 10   | 17    | 1                        | 3    | 14    | 110        |
| 03:30 PM    | 4                       | 58   | 0     | 16                       | 3    | 12    | 2                       | 11   | 7     | 0                        | 5    | 10    | 128        |
| 03:45 PM    | 3                       | 43   | 3     | 24                       | 4    | 9     | 5                       | 13   | 11    | 0                        | 1    | 3     | 119        |
| Total       | 16                      | 171  | 3     | 76                       | 19   | 35    | 20                      | 46   | 46    | 1                        | 22   | 83    | 538        |
| 04:00 PM    | 2                       | 58   | 2     | 8                        | 2    | 4     | 1                       | 12   | 10    | 0                        | 2    | 8     | 109        |
| 04:15 PM    | 3                       | 62   | 0     | 29                       | 4    | 5     | 2                       | 12   | 13    | 0                        | 2    | 8     | 140        |
| 04:30 PM    | 1                       | 47   | 1     | 25                       | 1    | 5     | 3                       | 17   | 18    | 0                        | 1    | 7     | 126        |
| 04:45 PM    | 4                       | 37   | 1     | 25                       | 3    | 3     | 4                       | 22   | 4     | 0                        | 2    | 5     | 110        |
| Total       | 10                      | 204  | 4     | 87                       | 10   | 17    | 10                      | 63   | 45    | 0                        | 7    | 28    | 485        |
| 05:00 PM    | 3                       | 75   | 1     | 18                       | 0    | 9     | 4                       | 16   | 14    | 2                        | 9    | 15    | 166        |
| 05:15 PM    | 2                       | 67   | 0     | 24                       | 2    | 3     | 6                       | 26   | 17    | 0                        | 1    | 5     | 153        |
| 05:30 PM    | 4                       | 50   | 2     | 12                       | 0    | 2     | 1                       | 14   | 8     | 0                        | 4    | 2     | 99         |
| 05:45 PM    | 0                       | 25   | 0     | 11                       | 1    | 3     | 2                       | 18   | 12    | 0                        | 3    | 2     | 77         |
| Total       | 9                       | 217  | 3     | 65                       | 3    | 17    | 13                      | 74   | 51    | 2                        | 17   | 24    | 495        |
| Grand Total | 44                      | 705  | 12    | 286                      | 50   | 86    | 81                      | 235  | 184   | 4                        | 59   | 211   | 1957       |
| Apprch %    | 5.8                     | 92.6 | 1.6   | 67.8                     | 11.8 | 20.4  | 16.2                    | 47   | 36.8  | 1.5                      | 21.5 | 77    |            |
| Total %     | 2.2                     | 36   | 0.6   | 14.6                     | 2.6  | 4.4   | 4.1                     | 12   | 9.4   | 0.2                      | 3    | 10.8  |            |
| Cars        | 42                      | 682  | 12    | 281                      | 49   | 85    | 79                      | 217  | 184   | 4                        | 57   | 198   | 1890       |
| % Cars      | 95.5                    | 96.7 | 100   | 98.3                     | 98   | 98.8  | 97.5                    | 92.3 | 100   | 100                      | 96.6 | 93.8  | 96.6       |
| Trucks      | 2                       | 23   | 0     | 5                        | 1    | 1     | 2                       | 18   | 0     | 0                        | 2    | 13    | 67         |
| % Trucks    | 4.5                     | 3.3  | 0     | 1.7                      | 2    | 1.2   | 2.5                     | 7.7  | 0     | 0                        | 3.4  | 6.2   | 3.4        |

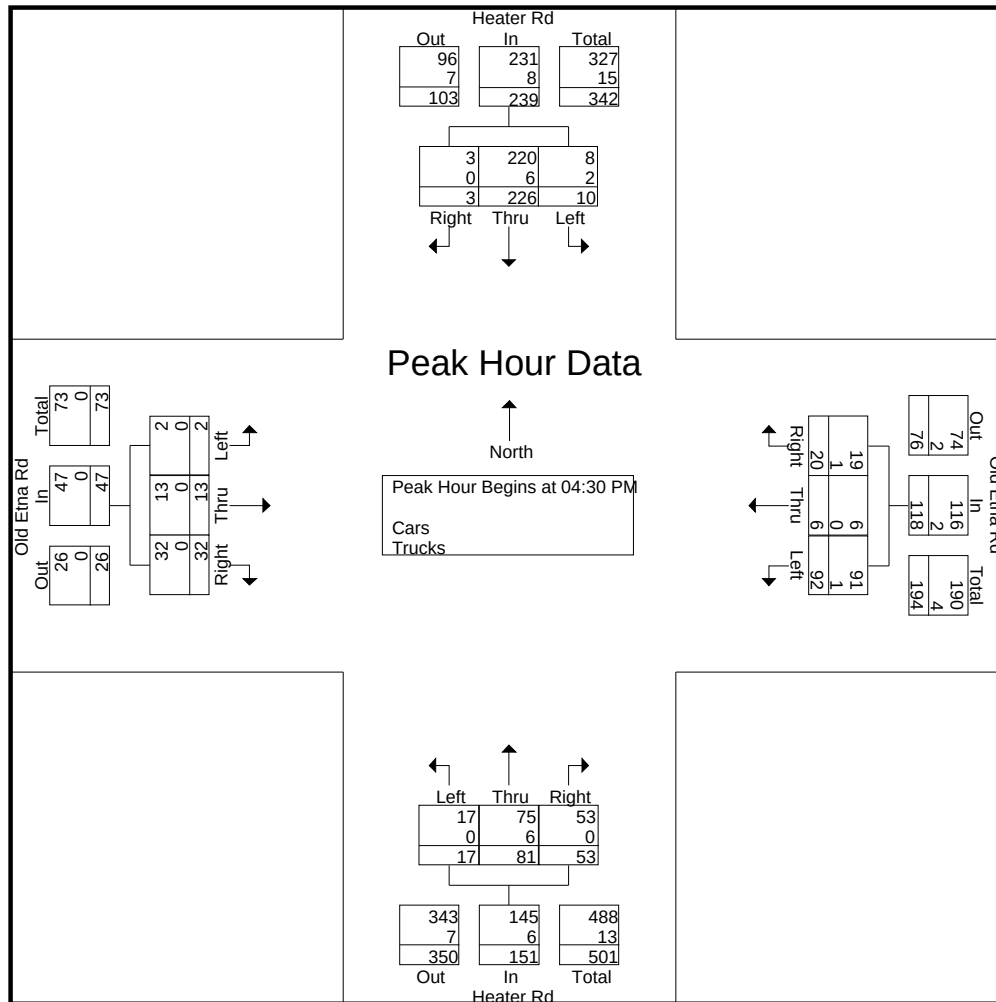
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 04:30 PM                                                   | 1                       | 47   | 1     | 49         | 25                       | 1    | 5     | 31         | 3                       | 17   | 18    | 38         | 0                        | 1    | 7     | 8          | 126        |
| 04:45 PM                                                   | 4                       | 37   | 1     | 42         | 25                       | 3    | 3     | 31         | 4                       | 22   | 4     | 30         | 0                        | 2    | 5     | 7          | 110        |
| 05:00 PM                                                   | 3                       | 75   | 1     | 79         | 18                       | 0    | 9     | 27         | 4                       | 16   | 14    | 34         | 2                        | 9    | 15    | 26         | 166        |
| 05:15 PM                                                   | 2                       | 67   | 0     | 69         | 24                       | 2    | 3     | 29         | 6                       | 26   | 17    | 49         | 0                        | 1    | 5     | 6          | 153        |
| Total Volume                                               | 10                      | 226  | 3     | 239        | 92                       | 6    | 20    | 118        | 17                      | 81   | 53    | 151        | 2                        | 13   | 32    | 47         | 555        |
| % App. Total                                               | 4.2                     | 94.6 | 1.3   |            | 78                       | 5.1  | 16.9  |            | 11.3                    | 53.6 | 35.1  |            | 4.3                      | 27.7 | 68.1  |            |            |
| PHF                                                        | .625                    | .753 | .750  | .756       | .920                     | .500 | .556  | .952       | .708                    | .779 | .736  | .770       | .250                     | .361 | .533  | .452       | .836       |
| Cars                                                       | 8                       | 220  | 3     | 231        | 91                       | 6    | 19    | 116        | 17                      | 75   | 53    | 145        | 2                        | 13   | 32    | 47         | 539        |
| % Cars                                                     | 80.0                    | 97.3 | 100   | 96.7       | 98.9                     | 100  | 95.0  | 98.3       | 100                     | 92.6 | 100   | 96.0       | 100                      | 100  | 100   | 100        | 97.1       |
| Trucks                                                     | 2                       | 6    | 0     | 8          | 1                        | 0    | 1     | 2          | 0                       | 6    | 0     | 6          | 0                        | 0    | 0     | 0          | 16         |
| % Trucks                                                   | 20.0                    | 2.7  | 0     | 3.3        | 1.1                      | 0    | 5.0   | 1.7        | 0                       | 7.4  | 0     | 4.0        | 0                        | 0    | 0     | 0          | 2.9        |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 2

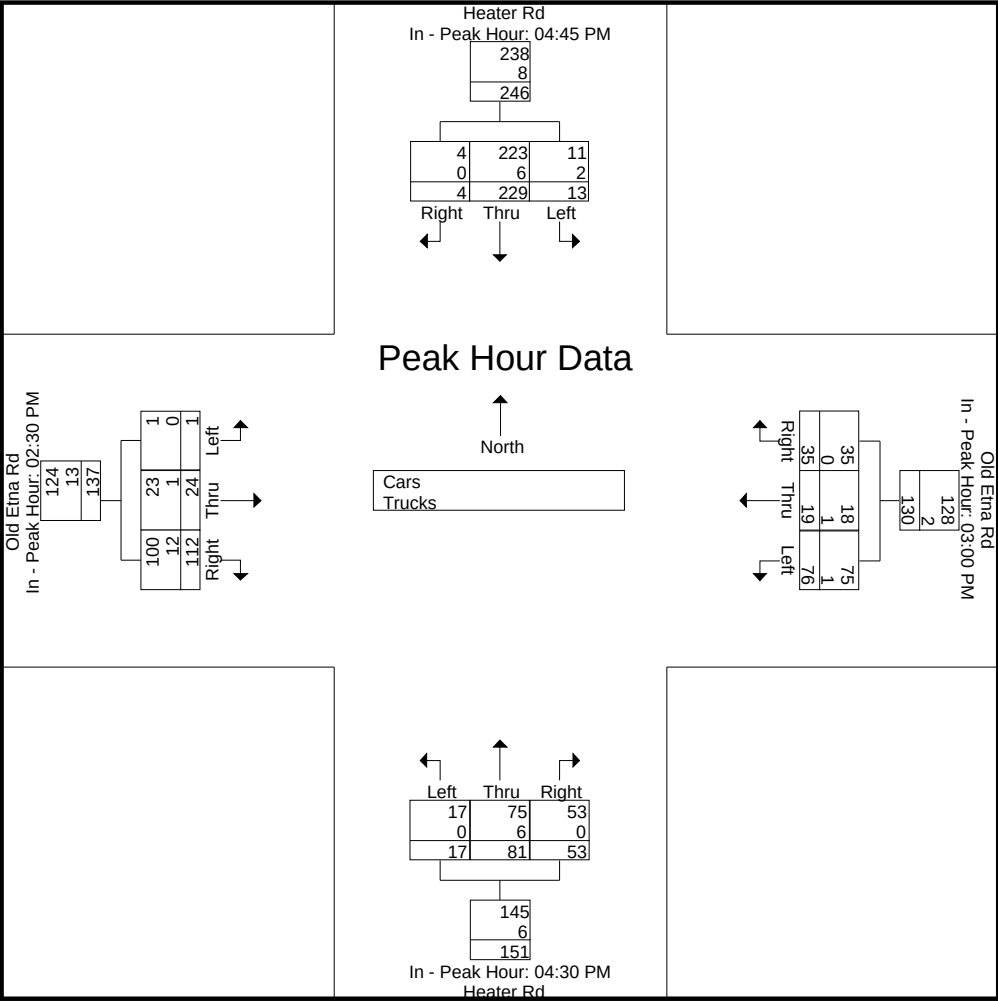


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:45 PM |      |      |      | 03:00 PM |      |      |      | 04:30 PM |      |      |      | 02:30 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 4        | 37   | 1    | 42   | 22       | 9    | 6    | 37   | 3        | 17   | 18   | 38   | 0        | 4    | 23   | 27   |
| +15 mins.    | 3        | 75   | 1    | 79   | 14       | 3    | 8    | 25   | 4        | 22   | 4    | 30   | 0        | 4    | 19   | 23   |
| +30 mins.    | 2        | 67   | 0    | 69   | 16       | 3    | 12   | 31   | 4        | 16   | 14   | 34   | 0        | 13   | 56   | 69   |
| +45 mins.    | 4        | 50   | 2    | 56   | 24       | 4    | 9    | 37   | 6        | 26   | 17   | 49   | 1        | 3    | 14   | 18   |
| Total Volume | 13       | 229  | 4    | 246  | 76       | 19   | 35   | 130  | 17       | 81   | 53   | 151  | 1        | 24   | 112  | 137  |
| % App. Total | 5.3      | 93.1 | 1.6  |      | 58.5     | 14.6 | 26.9 |      | 11.3     | 53.6 | 35.1 |      | 0.7      | 17.5 | 81.8 |      |
| PHF          | .813     | .763 | .500 | .778 | .792     | .528 | .729 | .878 | .708     | .779 | .736 | .770 | .250     | .462 | .500 | .496 |
| Cars         | 11       | 223  | 4    | 238  | 75       | 18   | 35   | 128  | 17       | 75   | 53   | 145  | 1        | 23   | 100  | 124  |
| % Cars       | 84.6     | 97.4 | 100  | 96.7 | 98.7     | 94.7 | 100  | 98.5 | 100      | 92.6 | 100  | 96   | 100      | 95.8 | 89.3 | 90.5 |
| Trucks       | 2        | 6    | 0    | 8    | 1        | 1    | 0    | 2    | 0        | 6    | 0    | 6    | 0        | 1    | 12   | 13   |
| % Trucks     | 15.4     | 2.6  | 0    | 3.3  | 1.3      | 5.3  | 0    | 1.5  | 0        | 7.4  | 0    | 4    | 0        | 4.2  | 10.7 | 9.5  |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 02:00 PM    | 2                       | 24   | 1     | 9                        | 3    | 1     | 5                       | 9    | 9     | 1                        | 2    | 19    | 85         |
| 02:15 PM    | 2                       | 22   | 0     | 15                       | 4    | 7     | 10                      | 17   | 6     | 0                        | 3    | 14    | 100        |
| 02:30 PM    | 3                       | 34   | 1     | 19                       | 6    | 4     | 11                      | 11   | 13    | 0                        | 4    | 17    | 123        |
| 02:45 PM    | 2                       | 27   | 0     | 14                       | 5    | 5     | 11                      | 10   | 14    | 0                        | 3    | 16    | 107        |
| Total       | 9                       | 107  | 2     | 57                       | 18   | 17    | 37                      | 47   | 42    | 1                        | 12   | 66    | 415        |
| 03:00 PM    | 3                       | 37   | 0     | 22                       | 9    | 6     | 9                       | 11   | 11    | 0                        | 13   | 53    | 174        |
| 03:15 PM    | 6                       | 30   | 0     | 13                       | 3    | 8     | 3                       | 9    | 17    | 1                        | 3    | 14    | 107        |
| 03:30 PM    | 4                       | 57   | 0     | 16                       | 3    | 12    | 2                       | 10   | 7     | 0                        | 5    | 10    | 126        |
| 03:45 PM    | 3                       | 42   | 3     | 24                       | 3    | 9     | 5                       | 12   | 11    | 0                        | 1    | 3     | 116        |
| Total       | 16                      | 166  | 3     | 75                       | 18   | 35    | 19                      | 42   | 46    | 1                        | 22   | 80    | 523        |
| 04:00 PM    | 2                       | 56   | 2     | 8                        | 2    | 4     | 1                       | 11   | 10    | 0                        | 2    | 8     | 106        |
| 04:15 PM    | 3                       | 60   | 0     | 28                       | 4    | 5     | 2                       | 11   | 13    | 0                        | 2    | 8     | 136        |
| 04:30 PM    | 1                       | 46   | 1     | 25                       | 1    | 5     | 3                       | 16   | 18    | 0                        | 1    | 7     | 124        |
| 04:45 PM    | 3                       | 36   | 1     | 24                       | 3    | 3     | 4                       | 19   | 4     | 0                        | 2    | 5     | 104        |
| Total       | 9                       | 198  | 4     | 85                       | 10   | 17    | 10                      | 57   | 45    | 0                        | 7    | 28    | 470        |
| 05:00 PM    | 3                       | 75   | 1     | 18                       | 0    | 8     | 4                       | 15   | 14    | 2                        | 9    | 15    | 164        |
| 05:15 PM    | 1                       | 63   | 0     | 24                       | 2    | 3     | 6                       | 25   | 17    | 0                        | 1    | 5     | 147        |
| 05:30 PM    | 4                       | 49   | 2     | 11                       | 0    | 2     | 1                       | 14   | 8     | 0                        | 3    | 2     | 96         |
| 05:45 PM    | 0                       | 24   | 0     | 11                       | 1    | 3     | 2                       | 17   | 12    | 0                        | 3    | 2     | 75         |
| Total       | 8                       | 211  | 3     | 64                       | 3    | 16    | 13                      | 71   | 51    | 2                        | 16   | 24    | 482        |
| Grand Total | 42                      | 682  | 12    | 281                      | 49   | 85    | 79                      | 217  | 184   | 4                        | 57   | 198   | 1890       |
| Apprch %    | 5.7                     | 92.7 | 1.6   | 67.7                     | 11.8 | 20.5  | 16.5                    | 45.2 | 38.3  | 1.5                      | 22   | 76.4  |            |
| Total %     | 2.2                     | 36.1 | 0.6   | 14.9                     | 2.6  | 4.5   | 4.2                     | 11.5 | 9.7   | 0.2                      | 3    | 10.5  |            |

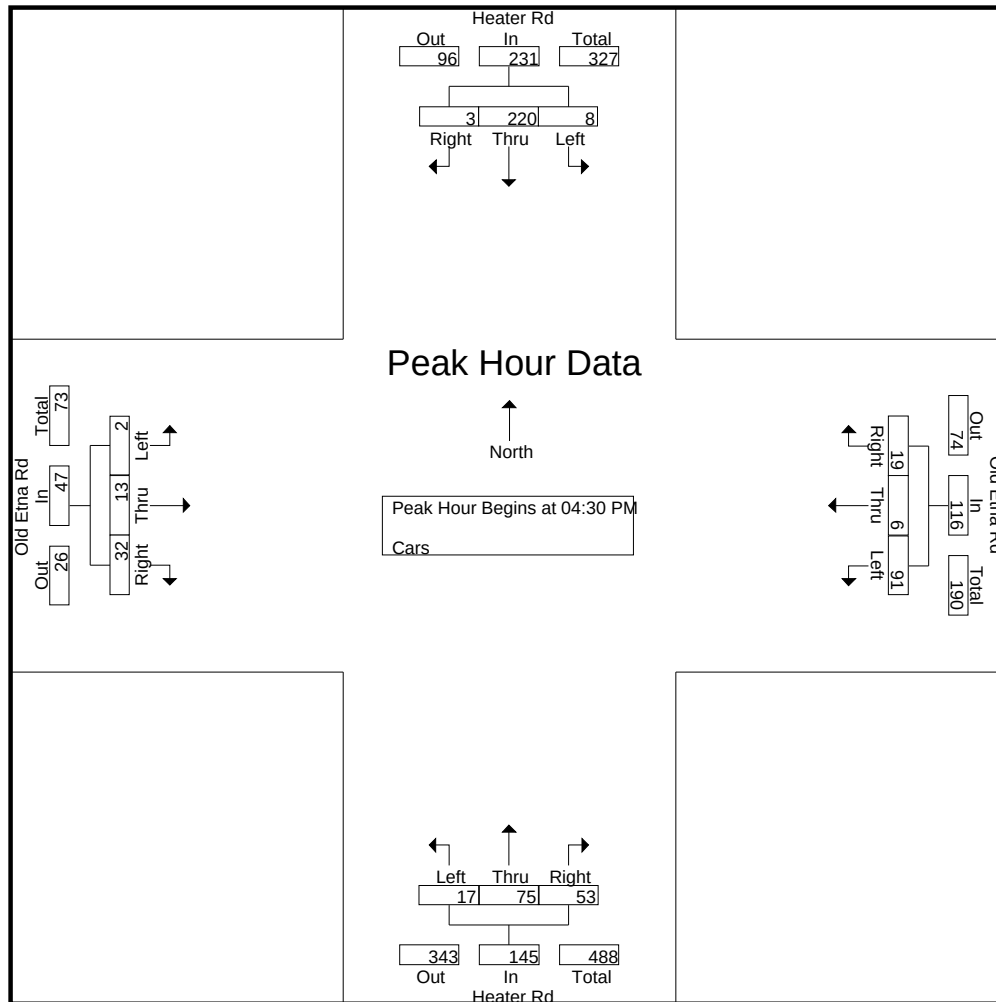
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 04:30 PM                                                   | 1                       | 46   | 1     | 48         | 25                       | 1    | 5     | 31         | 3                       | 16   | 18    | 37         | 0                        | 1    | 7     | 8          | 124        |
| 04:45 PM                                                   | 3                       | 36   | 1     | 40         | 24                       | 3    | 3     | 30         | 4                       | 19   | 4     | 27         | 0                        | 2    | 5     | 7          | 104        |
| 05:00 PM                                                   | 3                       | 75   | 1     | 79         | 18                       | 0    | 8     | 26         | 4                       | 15   | 14    | 33         | 2                        | 9    | 15    | 26         | 164        |
| 05:15 PM                                                   | 1                       | 63   | 0     | 64         | 24                       | 2    | 3     | 29         | 6                       | 25   | 17    | 48         | 0                        | 1    | 5     | 6          | 147        |
| Total Volume                                               | 8                       | 220  | 3     | 231        | 91                       | 6    | 19    | 116        | 17                      | 75   | 53    | 145        | 2                        | 13   | 32    | 47         | 539        |
| % App. Total                                               | 3.5                     | 95.2 | 1.3   |            | 78.4                     | 5.2  | 16.4  |            | 11.7                    | 51.7 | 36.6  |            | 4.3                      | 27.7 | 68.1  |            |            |
| PHF                                                        | .667                    | .733 | .750  | .731       | .910                     | .500 | .594  | .935       | .708                    | .750 | .736  | .755       | .250                     | .361 | .533  | .452       | .822       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 5

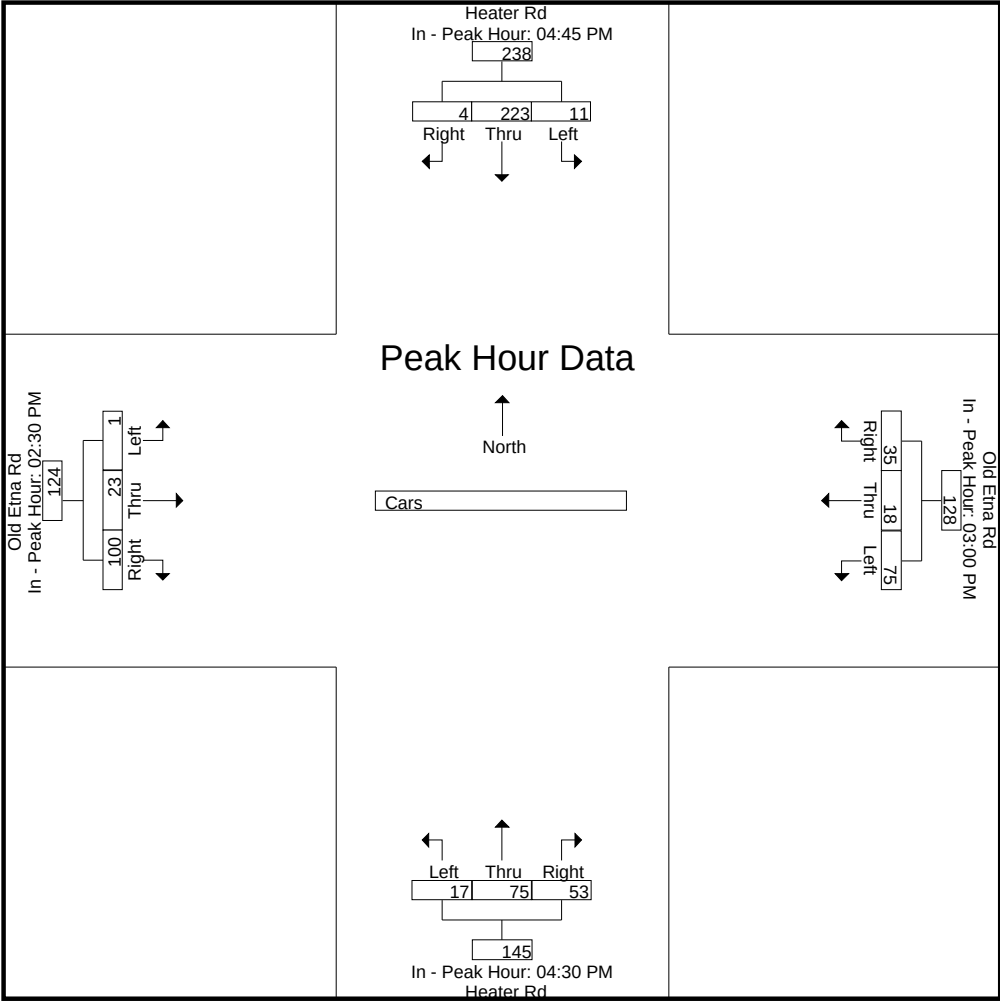


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:45 PM |           |          |           | 03:00 PM  |          |           |           | 04:30 PM |           |           |           | 02:30 PM |           |           |           |
|--------------|----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|
| +0 mins.     | 3        | 36        | 1        | 40        | 22        | <b>9</b> | 6         | <b>37</b> | 3        | 16        | <b>18</b> | 37        | 0        | 4         | 17        | 21        |
| +15 mins.    | 3        | <b>75</b> | 1        | <b>79</b> | 13        | 3        | 8         | 24        | 4        | 19        | 4         | 27        | 0        | 3         | 16        | 19        |
| +30 mins.    | 1        | 63        | 0        | 64        | 16        | 3        | <b>12</b> | 31        | 4        | 15        | 14        | 33        | 0        | <b>13</b> | <b>53</b> | <b>66</b> |
| +45 mins.    | <b>4</b> | 49        | <b>2</b> | 55        | <b>24</b> | 3        | 9         | 36        | <b>6</b> | <b>25</b> | 17        | <b>48</b> | <b>1</b> | 3         | 14        | 18        |
| Total Volume | 11       | 223       | 4        | 238       | 75        | 18       | 35        | 128       | 17       | 75        | 53        | 145       | 1        | 23        | 100       | 124       |
| % App. Total | 4.6      | 93.7      | 1.7      |           | 58.6      | 14.1     | 27.3      |           | 11.7     | 51.7      | 36.6      |           | 0.8      | 18.5      | 80.6      |           |
| PHF          | .688     | .743      | .500     | .753      | .781      | .500     | .729      | .865      | .708     | .750      | .736      | .755      | .250     | .442      | .472      | .470      |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 02:00 PM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 1     | 3          |
| 02:15 PM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 2    | 0     | 0                        | 0    | 0     | 3          |
| 02:30 PM    | 0                       | 3    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 6     | 10         |
| 02:45 PM    | 0                       | 1    | 0     | 1                        | 0    | 0     | 1                       | 1    | 0     | 0                        | 1    | 3     | 8          |
| Total       | 0                       | 6    | 0     | 1                        | 0    | 0     | 1                       | 5    | 0     | 0                        | 1    | 10    | 24         |
| 03:00 PM    | 0                       | 2    | 0     | 0                        | 0    | 0     | 1                       | 1    | 0     | 0                        | 0    | 3     | 7          |
| 03:15 PM    | 0                       | 1    | 0     | 1                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 3          |
| 03:30 PM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 2          |
| 03:45 PM    | 0                       | 1    | 0     | 0                        | 1    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 3          |
| Total       | 0                       | 5    | 0     | 1                        | 1    | 0     | 1                       | 4    | 0     | 0                        | 0    | 3     | 15         |
| 04:00 PM    | 0                       | 2    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 3          |
| 04:15 PM    | 0                       | 2    | 0     | 1                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 4          |
| 04:30 PM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 2          |
| 04:45 PM    | 1                       | 1    | 0     | 1                        | 0    | 0     | 0                       | 3    | 0     | 0                        | 0    | 0     | 6          |
| Total       | 1                       | 6    | 0     | 2                        | 0    | 0     | 0                       | 6    | 0     | 0                        | 0    | 0     | 15         |
| 05:00 PM    | 0                       | 0    | 0     | 0                        | 0    | 1     | 0                       | 1    | 0     | 0                        | 0    | 0     | 2          |
| 05:15 PM    | 1                       | 4    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 6          |
| 05:30 PM    | 0                       | 1    | 0     | 1                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 1    | 0     | 3          |
| 05:45 PM    | 0                       | 1    | 0     | 0                        | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 2          |
| Total       | 1                       | 6    | 0     | 1                        | 0    | 1     | 0                       | 3    | 0     | 0                        | 1    | 0     | 13         |
| Grand Total | 2                       | 23   | 0     | 5                        | 1    | 1     | 2                       | 18   | 0     | 0                        | 2    | 13    | 67         |
| Apprch %    | 8                       | 92   | 0     | 71.4                     | 14.3 | 14.3  | 10                      | 90   | 0     | 0                        | 13.3 | 86.7  |            |
| Total %     | 3                       | 34.3 | 0     | 7.5                      | 1.5  | 1.5   | 3                       | 26.9 | 0     | 0                        | 3    | 19.4  |            |

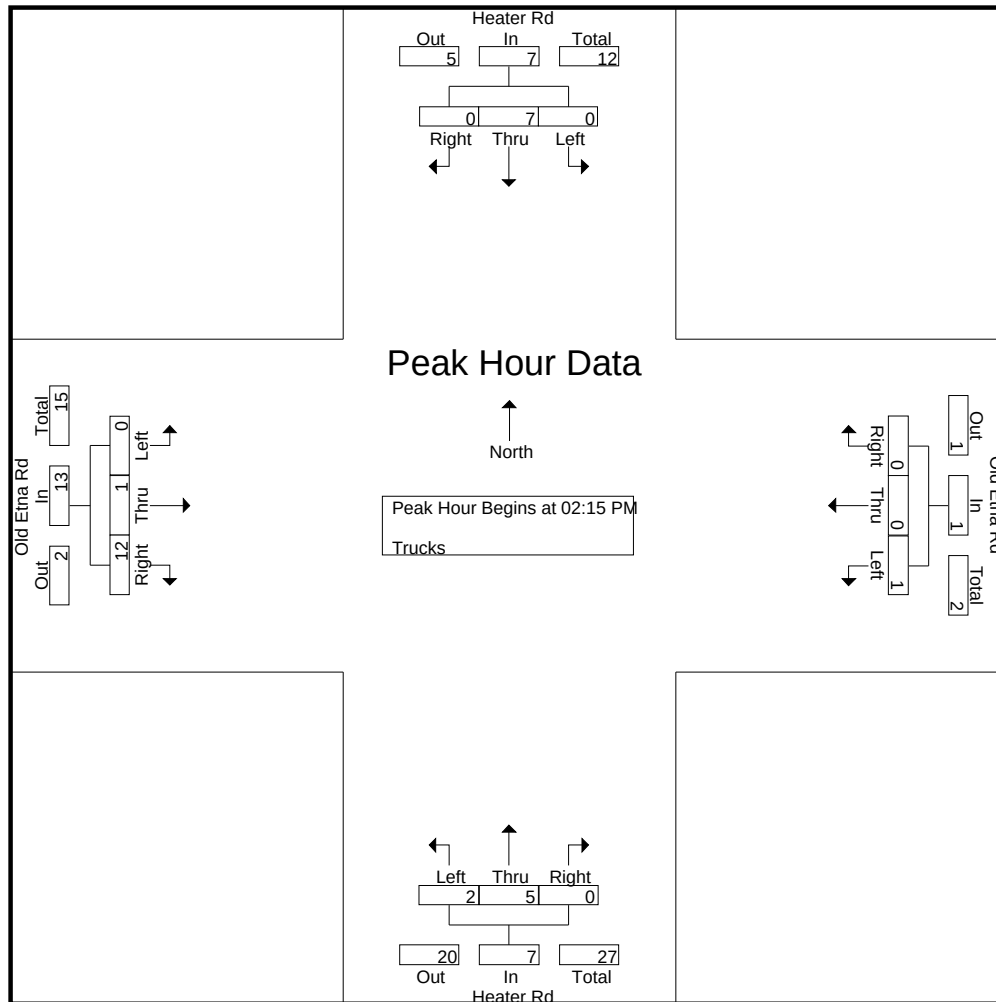
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            | Int. Total |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |            |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:15 PM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 02:15 PM                                                   | 0                       | 1    | 0     | 1          | 0                        | 0    | 0     | 0          | 0                       | 2    | 0     | 2          | 0                        | 0    | 0     | 0          | 3          |
| 02:30 PM                                                   | 0                       | 3    | 0     | 3          | 0                        | 0    | 0     | 0          | 0                       | 1    | 0     | 1          | 0                        | 0    | 6     | 6          | 10         |
| 02:45 PM                                                   | 0                       | 1    | 0     | 1          | 1                        | 0    | 0     | 1          | 1                       | 1    | 0     | 2          | 0                        | 1    | 3     | 4          | 8          |
| 03:00 PM                                                   | 0                       | 2    | 0     | 2          | 0                        | 0    | 0     | 0          | 1                       | 1    | 0     | 2          | 0                        | 0    | 3     | 3          | 7          |
| Total Volume                                               | 0                       | 7    | 0     | 7          | 1                        | 0    | 0     | 1          | 2                       | 5    | 0     | 7          | 0                        | 1    | 12    | 13         | 28         |
| % App. Total                                               | 0                       | 100  | 0     |            | 100                      | 0    | 0     |            | 28.6                    | 71.4 | 0     |            | 0                        | 7.7  | 92.3  |            |            |
| PHF                                                        | .000                    | .583 | .000  | .583       | .250                     | .000 | .000  | .250       | .500                    | .625 | .000  | .875       | .000                     | .250 | .500  | .542       | .700       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 8

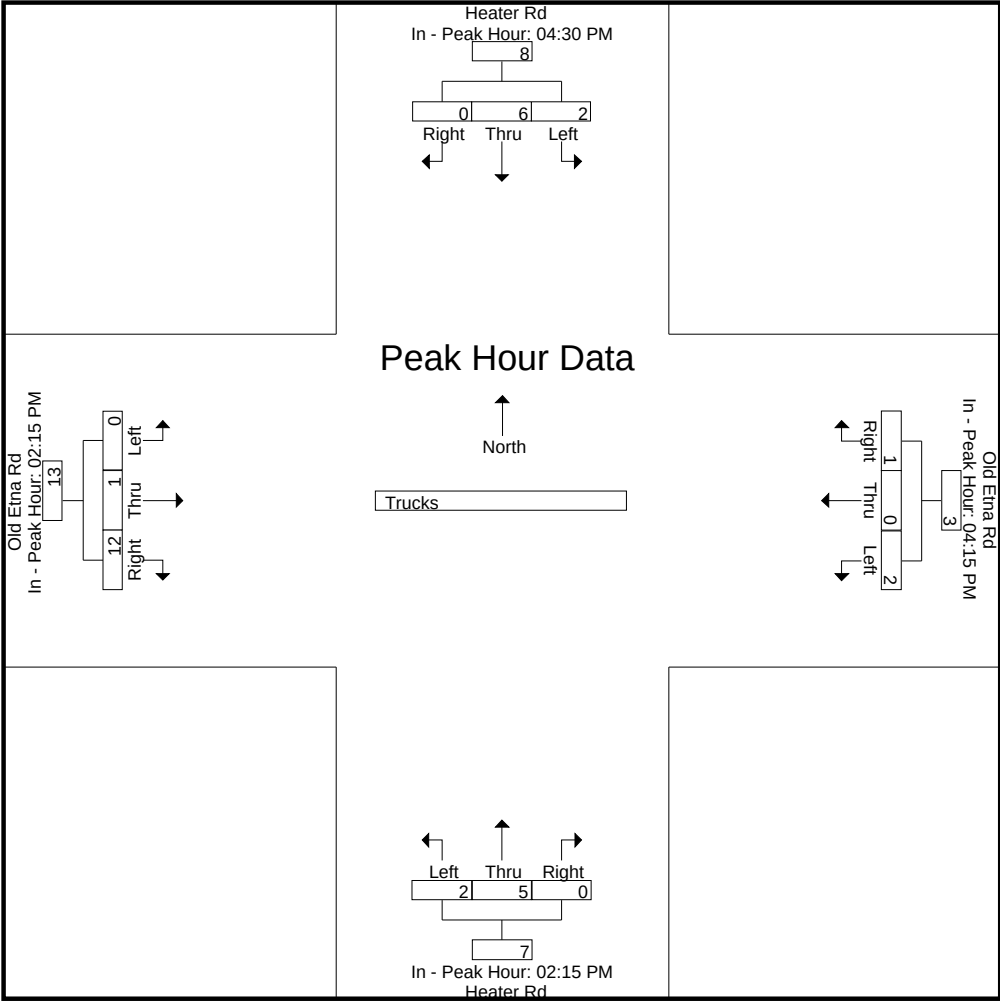


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      |      | 04:15 PM |      |      |      | 02:15 PM |      |      |      | 02:15 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 1    | 0    | 1    | 1        | 0    | 0    | 1    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    |
| +15 mins.    | 1        | 1    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 6    | 6    |
| +30 mins.    | 0        | 0    | 0    | 0    | 1        | 0    | 0    | 1    | 1        | 1    | 0    | 2    | 0        | 1    | 3    | 4    |
| +45 mins.    | 1        | 4    | 0    | 5    | 0        | 0    | 1    | 1    | 1        | 1    | 0    | 2    | 0        | 0    | 3    | 3    |
| Total Volume | 2        | 6    | 0    | 8    | 2        | 0    | 1    | 3    | 2        | 5    | 0    | 7    | 0        | 1    | 12   | 13   |
| % App. Total | 25       | 75   | 0    |      | 66.7     | 0    | 33.3 |      | 28.6     | 71.4 | 0    |      | 0        | 7.7  | 92.3 |      |
| PHF          | .500     | .375 | .000 | .400 | .500     | .000 | .250 | .750 | .500     | .625 | .000 | .875 | .000     | .250 | .500 | .542 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Heater Rd<br>From North |      |       |      | Old Etna Rd<br>From East |      |       |      | Heater Rd<br>From South |      |       |      | Old Etna Rd<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|--------------------------|------|-------|------|-------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds |              |              |            |
| 02:00 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 1    | 0                       | 0    | 0     | 1    | 0                        | 1    | 0     | 0    | 2            | 1            | 3          |
| 02:15 PM    | 0                       | 0    | 0     | 0    | 0                        | 3    | 1     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 4            | 5          |
| 02:30 PM    | 0                       | 0    | 1     | 0    | 0                        | 2    | 0     | 1    | 0                       | 0    | 0     | 8    | 0                        | 0    | 0     | 0    | 9            | 3            | 12         |
| 02:45 PM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 2    | 0                       | 0    | 0     | 7    | 0                        | 0    | 0     | 0    | 9            | 1            | 10         |
| Total       | 0                       | 0    | 1     | 0    | 0                        | 6    | 1     | 4    | 0                       | 0    | 0     | 17   | 0                        | 1    | 0     | 0    | 21           | 9            | 30         |
| 03:00 PM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 2    | 0                       | 0    | 0     | 4    | 0                        | 0    | 0     | 0    | 6            | 1            | 7          |
| 03:15 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 1    | 0                       | 0    | 0     | 1    | 0                        | 0    | 1     | 0    | 2            | 1            | 3          |
| 03:30 PM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 2    | 0                       | 0    | 0     | 6    | 0                        | 0    | 0     | 0    | 8            | 1            | 9          |
| 03:45 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 1    | 0                       | 0    | 0     | 2    | 0                        | 0    | 0     | 0    | 3            | 0            | 3          |
| Total       | 0                       | 0    | 0     | 0    | 0                        | 2    | 0     | 6    | 0                       | 0    | 0     | 13   | 0                        | 0    | 1     | 0    | 19           | 3            | 22         |
| 04:00 PM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 3    | 0                       | 0    | 0     | 2    | 0                        | 0    | 0     | 0    | 5            | 1            | 6          |
| 04:15 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 3    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 0    | 6            | 0            | 6          |
| 04:30 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 2    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 2            | 0            | 2          |
| 04:45 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 8    | 0                       | 0    | 0     | 5    | 0                        | 0    | 0     | 0    | 13           | 1            | 14         |
| 05:00 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 05:15 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 1    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| 05:30 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 05:45 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 1    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 2    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 2            | 0            | 2          |
| Grand Total | 0                       | 0    | 1     | 0    | 0                        | 9    | 1     | 20   | 0                       | 0    | 0     | 35   | 0                        | 1    | 1     | 0    | 55           | 13           | 68         |
| Apprch %    | 0                       | 0    | 100   |      | 0                        | 90   | 10    |      | 0                       | 0    | 0     |      | 0                        | 50   | 50    |      |              |              |            |
| Total %     | 0                       | 0    | 7.7   |      | 0                        | 69.2 | 7.7   |      | 0                       | 0    | 0     |      | 0                        | 7.7  | 7.7   |      | 80.9         | 19.1         |            |

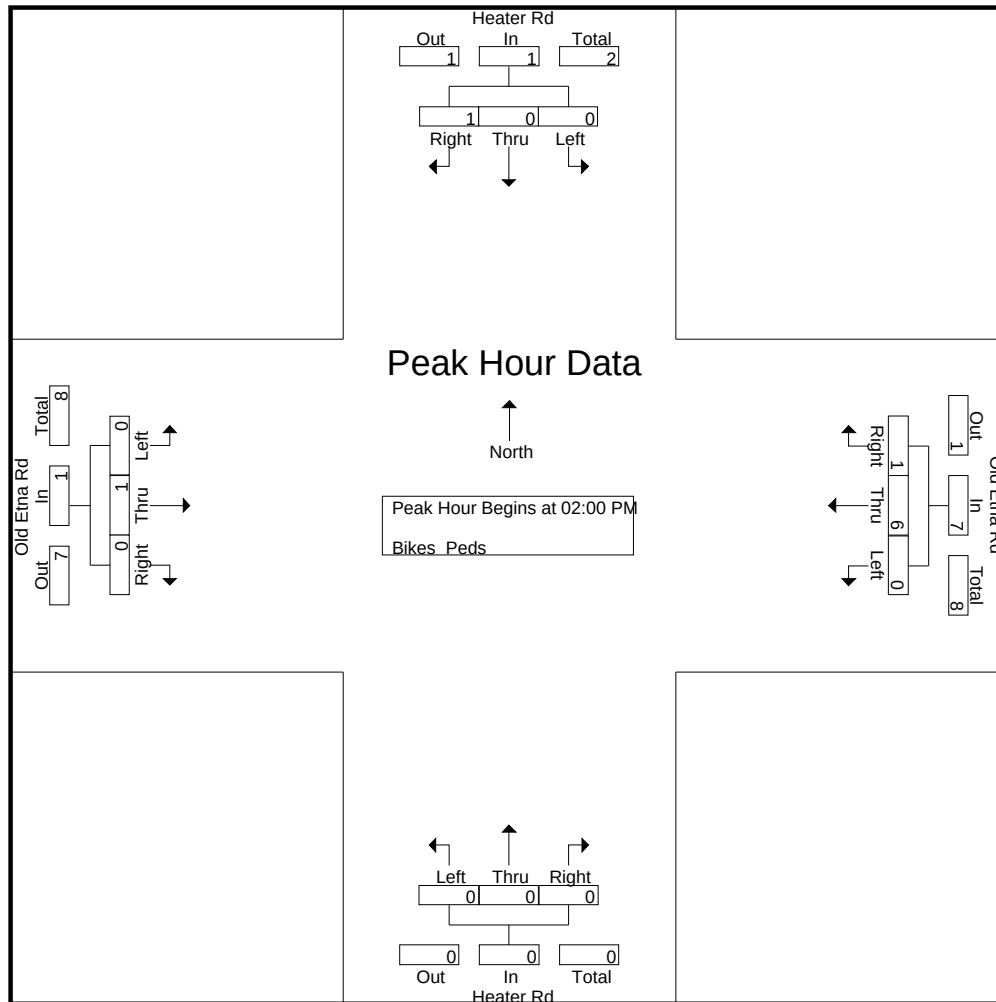
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            | Int. Total |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |            |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 02:00 PM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 1          |
| 02:15 PM                                                   | 0                       | 0    | 0     | 0          | 0                        | 3    | 1     | 4          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 4          |
| 02:30 PM                                                   | 0                       | 0    | 1     | 1          | 0                        | 2    | 0     | 2          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 3          |
| 02:45 PM                                                   | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 1          |
| Total Volume                                               | 0                       | 0    | 1     | 1          | 0                        | 6    | 1     | 7          | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 9          |
| % App. Total                                               | 0                       | 0    | 100   |            | 0                        | 85.7 | 14.3  |            | 0                       | 0    | 0     |            | 0                        | 100  | 0     |            |            |
| PHF                                                        | .000                    | .000 | .250  | .250       | .000                     | .500 | .250  | .438       | .000                    | .000 | .000  | .000       | .000                     | .250 | .000  | .250       | .563       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 11

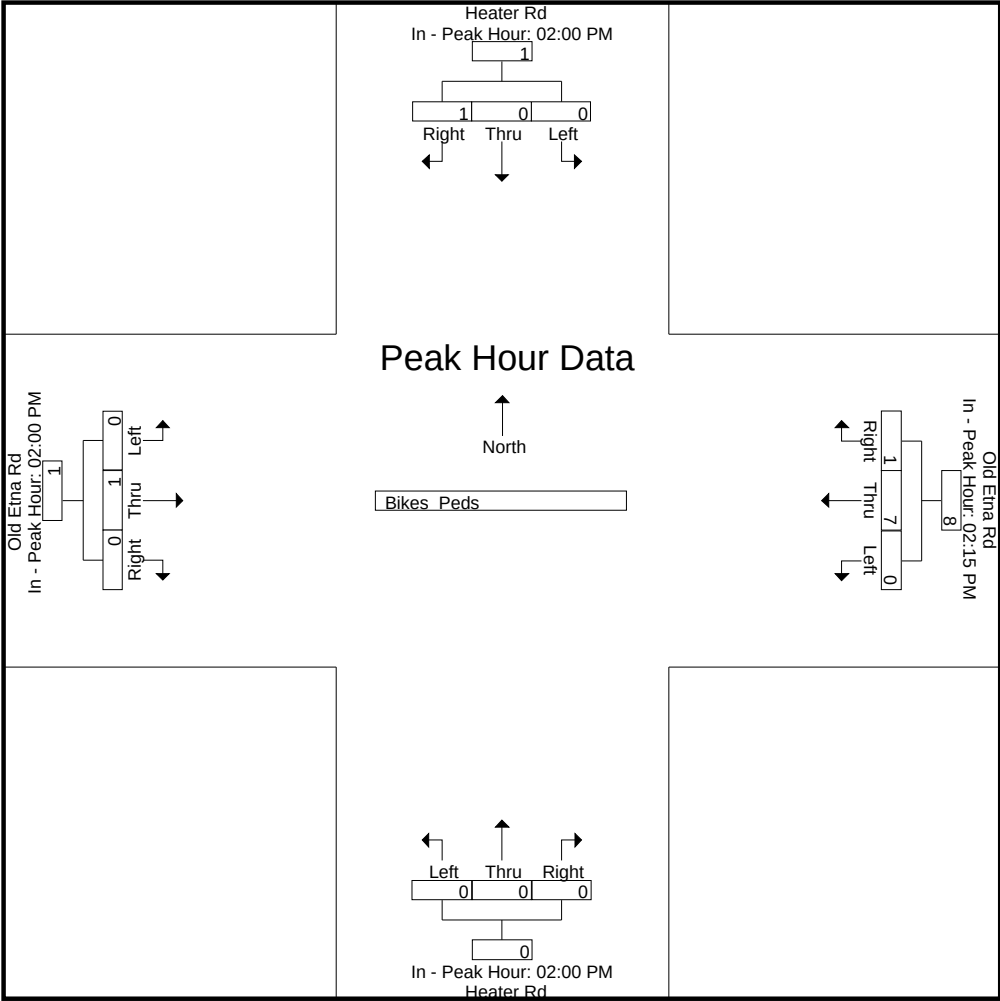


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      |      | 02:15 PM |      |      |      | 02:00 PM |      |      |      | 02:00 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 3    | 1    | 4    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 1    | 1    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 0        | 0    | 1    | 1    | 0        | 7    | 1    | 8    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    |
| % App. Total | 0        | 0    | 100  |      | 0        | 87.5 | 12.5 |      | 0        | 0    | 0    |      | 0        | 100  | 0    |      |
| PHF          | .000     | .000 | .250 | .250 | .000     | .583 | .250 | .500 | .000     | .000 | .000 | .000 | .000     | .250 | .000 | .250 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933004  
Site Code : 52933004  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 11:00 AM    | 2                       | 10   | 0     | 13                       | 0    | 3     | 0                       | 14   | 2     | 0                        | 3    | 2     | 49         |
| 11:15 AM    | 0                       | 16   | 0     | 14                       | 0    | 5     | 1                       | 14   | 8     | 0                        | 3    | 0     | 61         |
| 11:30 AM    | 0                       | 15   | 0     | 13                       | 0    | 1     | 1                       | 11   | 8     | 0                        | 2    | 0     | 51         |
| 11:45 AM    | 0                       | 17   | 0     | 10                       | 2    | 1     | 0                       | 4    | 5     | 0                        | 1    | 1     | 41         |
| Total       | 2                       | 58   | 0     | 50                       | 2    | 10    | 2                       | 43   | 23    | 0                        | 9    | 3     | 202        |
| 12:00 PM    | 0                       | 18   | 0     | 6                        | 0    | 2     | 0                       | 11   | 3     | 0                        | 1    | 1     | 42         |
| 12:15 PM    | 0                       | 12   | 0     | 22                       | 1    | 0     | 0                       | 9    | 11    | 0                        | 1    | 0     | 56         |
| 12:30 PM    | 2                       | 14   | 1     | 12                       | 0    | 1     | 0                       | 10   | 6     | 0                        | 2    | 0     | 48         |
| 12:45 PM    | 0                       | 12   | 0     | 9                        | 0    | 1     | 0                       | 12   | 7     | 0                        | 0    | 1     | 42         |
| Total       | 2                       | 56   | 1     | 49                       | 1    | 4     | 0                       | 42   | 27    | 0                        | 4    | 2     | 188        |
| Grand Total | 4                       | 114  | 1     | 99                       | 3    | 14    | 2                       | 85   | 50    | 0                        | 13   | 5     | 390        |
| Apprch %    | 3.4                     | 95.8 | 0.8   | 85.3                     | 2.6  | 12.1  | 1.5                     | 62   | 36.5  | 0                        | 72.2 | 27.8  |            |
| Total %     | 1                       | 29.2 | 0.3   | 25.4                     | 0.8  | 3.6   | 0.5                     | 21.8 | 12.8  | 0                        | 3.3  | 1.3   |            |
| Cars        | 4                       | 114  | 1     | 99                       | 3    | 14    | 2                       | 85   | 50    | 0                        | 13   | 5     | 390        |
| % Cars      | 100                     | 100  | 100   | 100                      | 100  | 100   | 100                     | 100  | 100   | 0                        | 100  | 100   | 100        |
| Trucks      | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| % Trucks    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |

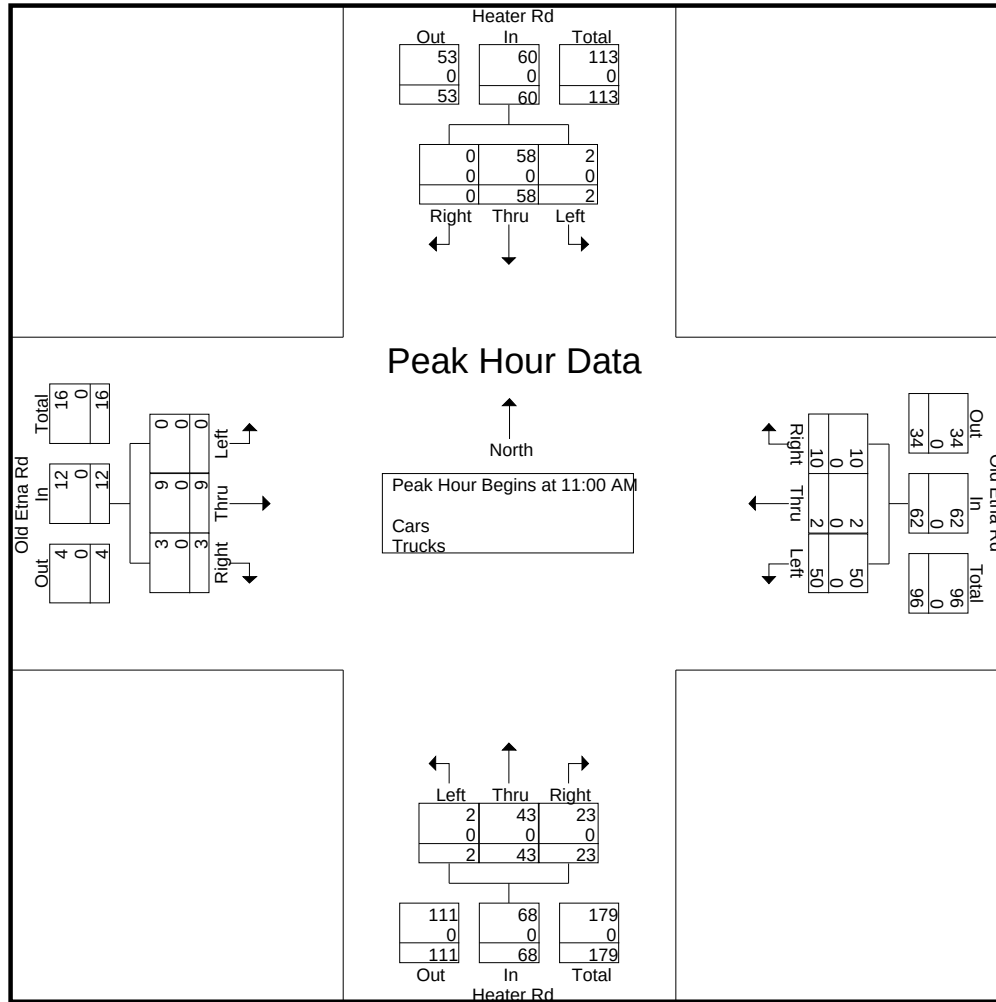
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 11:00 AM                                                   | 2                       | 10   | 0     | 12         | 13                       | 0    | 3     | 16         | 0                       | 14   | 2     | 16         | 0                        | 3    | 2     | 5          | 49         |
| 11:15 AM                                                   | 0                       | 16   | 0     | 16         | 14                       | 0    | 5     | 19         | 1                       | 14   | 8     | 23         | 0                        | 3    | 0     | 3          | 61         |
| 11:30 AM                                                   | 0                       | 15   | 0     | 15         | 13                       | 0    | 1     | 14         | 1                       | 11   | 8     | 20         | 0                        | 2    | 0     | 2          | 51         |
| 11:45 AM                                                   | 0                       | 17   | 0     | 17         | 10                       | 2    | 1     | 13         | 0                       | 4    | 5     | 9          | 0                        | 1    | 1     | 2          | 41         |
| Total Volume                                               | 2                       | 58   | 0     | 60         | 50                       | 2    | 10    | 62         | 2                       | 43   | 23    | 68         | 0                        | 9    | 3     | 12         | 202        |
| % App. Total                                               | 3.3                     | 96.7 | 0     |            | 80.6                     | 3.2  | 16.1  |            | 2.9                     | 63.2 | 33.8  |            | 0                        | 75   | 25    |            |            |
| PHF                                                        | .250                    | .853 | .000  | .882       | .893                     | .250 | .500  | .816       | .500                    | .768 | .719  | .739       | .000                     | .750 | .375  | .600       | .828       |
| Cars                                                       | 2                       | 58   | 0     | 60         | 50                       | 2    | 10    | 62         | 2                       | 43   | 23    | 68         | 0                        | 9    | 3     | 12         | 202        |
| % Cars                                                     | 100                     | 100  | 0     | 100        | 100                      | 100  | 100   | 100        | 100                     | 100  | 100   | 100        | 0                        | 100  | 100   | 100        | 100        |
| Trucks                                                     | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| % Trucks                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 2

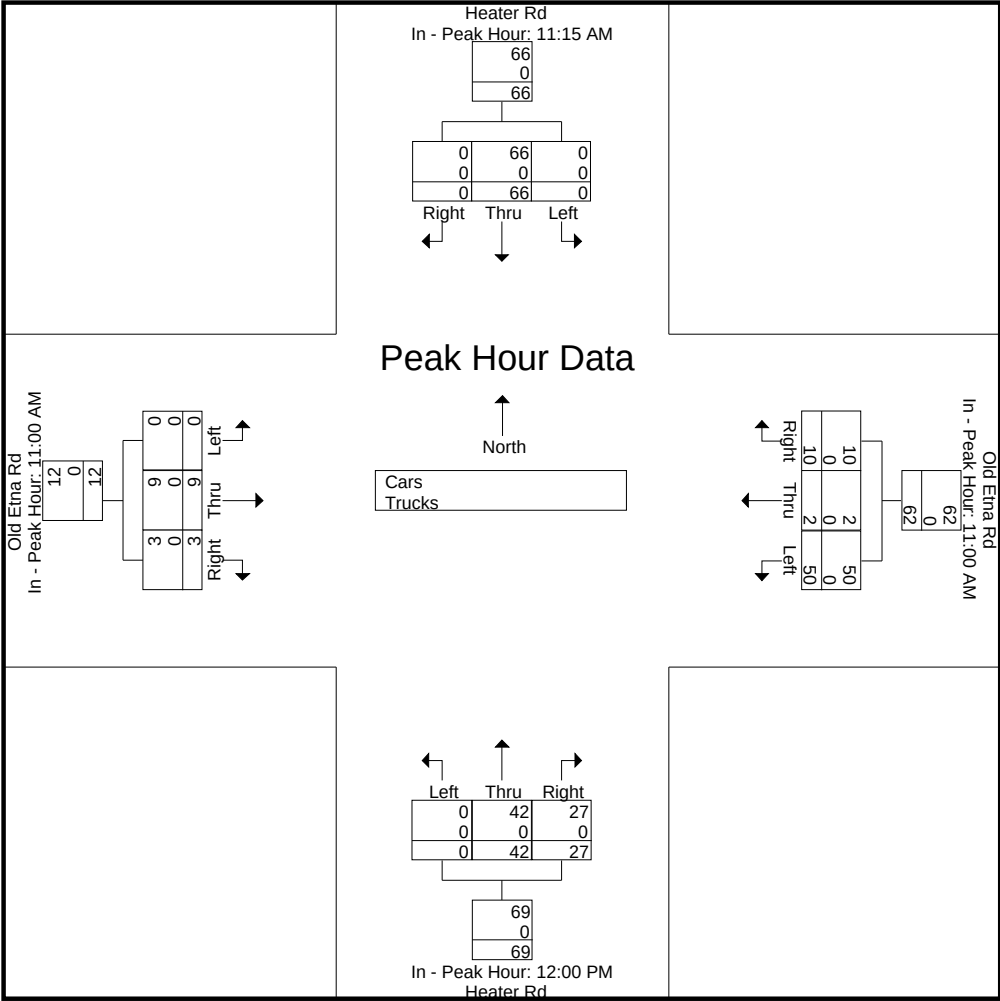


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:15 AM |           |      |           | 11:00 AM  |          |          |           | 12:00 PM |           |           |           | 11:00 AM |          |          |          |
|--------------|----------|-----------|------|-----------|-----------|----------|----------|-----------|----------|-----------|-----------|-----------|----------|----------|----------|----------|
| +0 mins.     | 0        | 16        | 0    | 16        | 13        | 0        | 3        | 16        | 0        | 11        | 3         | 14        | 0        | <b>3</b> | <b>2</b> | <b>5</b> |
| +15 mins.    | 0        | 15        | 0    | 15        | <b>14</b> | 0        | <b>5</b> | <b>19</b> | 0        | 9         | <b>11</b> | <b>20</b> | 0        | 3        | 0        | 3        |
| +30 mins.    | 0        | 17        | 0    | 17        | 13        | 0        | 1        | 14        | 0        | 10        | 6         | 16        | 0        | 2        | 0        | 2        |
| +45 mins.    | 0        | <b>18</b> | 0    | <b>18</b> | 10        | <b>2</b> | 1        | 13        | 0        | <b>12</b> | 7         | 19        | 0        | 1        | 1        | 2        |
| Total Volume | 0        | 66        | 0    | 66        | 50        | 2        | 10       | 62        | 0        | 42        | 27        | 69        | 0        | 9        | 3        | 12       |
| % App. Total | 0        | 100       | 0    |           | 80.6      | 3.2      | 16.1     |           | 0        | 60.9      | 39.1      |           | 0        | 75       | 25       |          |
| PHF          | .000     | .917      | .000 | .917      | .893      | .250     | .500     | .816      | .000     | .875      | .614      | .863      | .000     | .750     | .375     | .600     |
| Cars         | 0        | 66        | 0    | 66        | 50        | 2        | 10       | 62        | 0        | 42        | 27        | 69        | 0        | 9        | 3        | 12       |
| % Cars       | 0        | 100       | 0    | 100       | 100       | 100      | 100      | 100       | 0        | 100       | 100       | 100       | 0        | 100      | 100      | 100      |
| Trucks       | 0        | 0         | 0    | 0         | 0         | 0        | 0        | 0         | 0        | 0         | 0         | 0         | 0        | 0        | 0        | 0        |
| % Trucks     | 0        | 0         | 0    | 0         | 0         | 0        | 0        | 0         | 0        | 0         | 0         | 0         | 0        | 0        | 0        | 0        |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 4

## Groups Printed- Cars

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 11:00 AM    | 2                       | 10   | 0     | 13                       | 0    | 3     | 0                       | 14   | 2     | 0                        | 3    | 2     | 49         |
| 11:15 AM    | 0                       | 16   | 0     | 14                       | 0    | 5     | 1                       | 14   | 8     | 0                        | 3    | 0     | 61         |
| 11:30 AM    | 0                       | 15   | 0     | 13                       | 0    | 1     | 1                       | 11   | 8     | 0                        | 2    | 0     | 51         |
| 11:45 AM    | 0                       | 17   | 0     | 10                       | 2    | 1     | 0                       | 4    | 5     | 0                        | 1    | 1     | 41         |
| Total       | 2                       | 58   | 0     | 50                       | 2    | 10    | 2                       | 43   | 23    | 0                        | 9    | 3     | 202        |
| 12:00 PM    | 0                       | 18   | 0     | 6                        | 0    | 2     | 0                       | 11   | 3     | 0                        | 1    | 1     | 42         |
| 12:15 PM    | 0                       | 12   | 0     | 22                       | 1    | 0     | 0                       | 9    | 11    | 0                        | 1    | 0     | 56         |
| 12:30 PM    | 2                       | 14   | 1     | 12                       | 0    | 1     | 0                       | 10   | 6     | 0                        | 2    | 0     | 48         |
| 12:45 PM    | 0                       | 12   | 0     | 9                        | 0    | 1     | 0                       | 12   | 7     | 0                        | 0    | 1     | 42         |
| Total       | 2                       | 56   | 1     | 49                       | 1    | 4     | 0                       | 42   | 27    | 0                        | 4    | 2     | 188        |
| Grand Total | 4                       | 114  | 1     | 99                       | 3    | 14    | 2                       | 85   | 50    | 0                        | 13   | 5     | 390        |
| Apprch %    | 3.4                     | 95.8 | 0.8   | 85.3                     | 2.6  | 12.1  | 1.5                     | 62   | 36.5  | 0                        | 72.2 | 27.8  |            |
| Total %     | 1                       | 29.2 | 0.3   | 25.4                     | 0.8  | 3.6   | 0.5                     | 21.8 | 12.8  | 0                        | 3.3  | 1.3   |            |

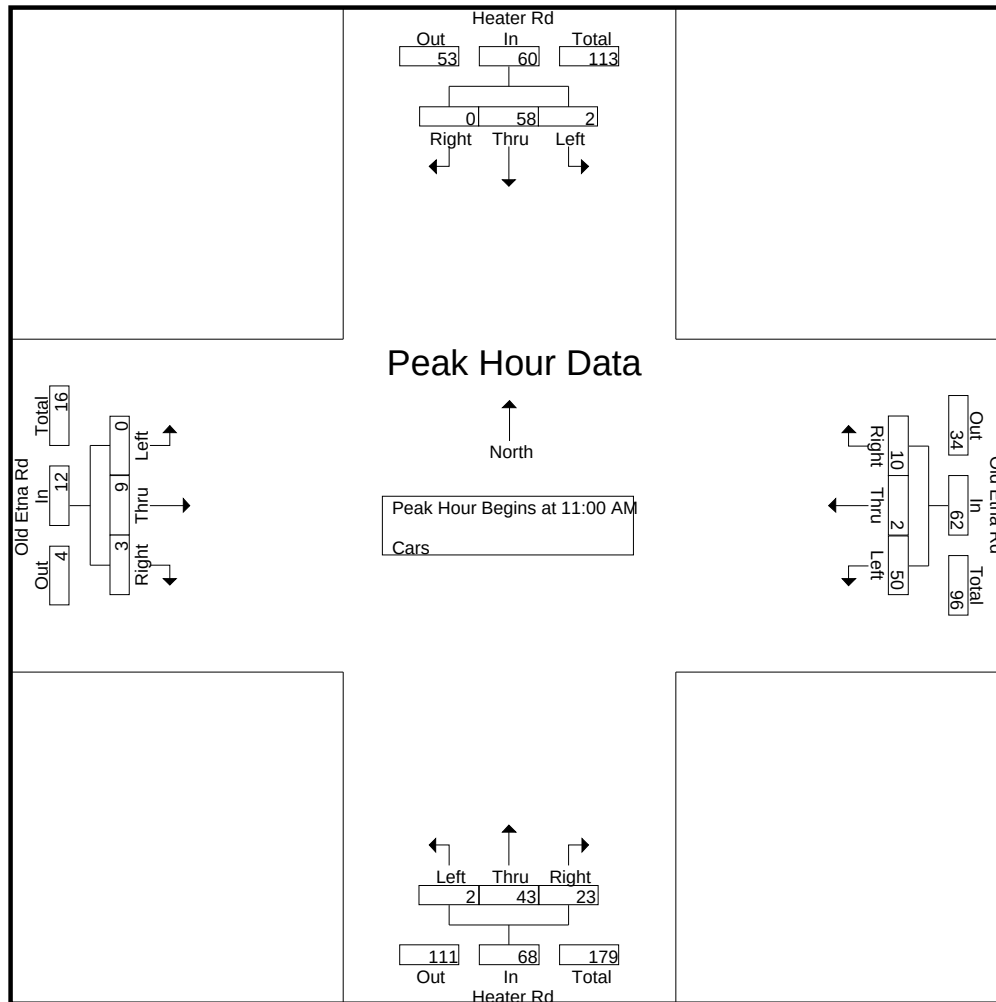
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            | Int. Total |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |            |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 11:00 AM                                                   | 2                       | 10   | 0     | 12         | 13                       | 0    | 3     | 16         | 0                       | 14   | 2     | 16         | 0                        | 3    | 2     | 5          | 49         |
| 11:15 AM                                                   | 0                       | 16   | 0     | 16         | 14                       | 0    | 5     | 19         | 1                       | 14   | 8     | 23         | 0                        | 3    | 0     | 3          | 61         |
| 11:30 AM                                                   | 0                       | 15   | 0     | 15         | 13                       | 0    | 1     | 14         | 1                       | 11   | 8     | 20         | 0                        | 2    | 0     | 2          | 51         |
| 11:45 AM                                                   | 0                       | 17   | 0     | 17         | 10                       | 2    | 1     | 13         | 0                       | 4    | 5     | 9          | 0                        | 1    | 1     | 2          | 41         |
| Total Volume                                               | 2                       | 58   | 0     | 60         | 50                       | 2    | 10    | 62         | 2                       | 43   | 23    | 68         | 0                        | 9    | 3     | 12         | 202        |
| % App. Total                                               | 3.3                     | 96.7 | 0     |            | 80.6                     | 3.2  | 16.1  |            | 2.9                     | 63.2 | 33.8  |            | 0                        | 75   | 25    |            |            |
| PHF                                                        | .250                    | .853 | .000  | .882       | .893                     | .250 | .500  | .816       | .500                    | .768 | .719  | .739       | .000                     | .750 | .375  | .600       | .828       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 5

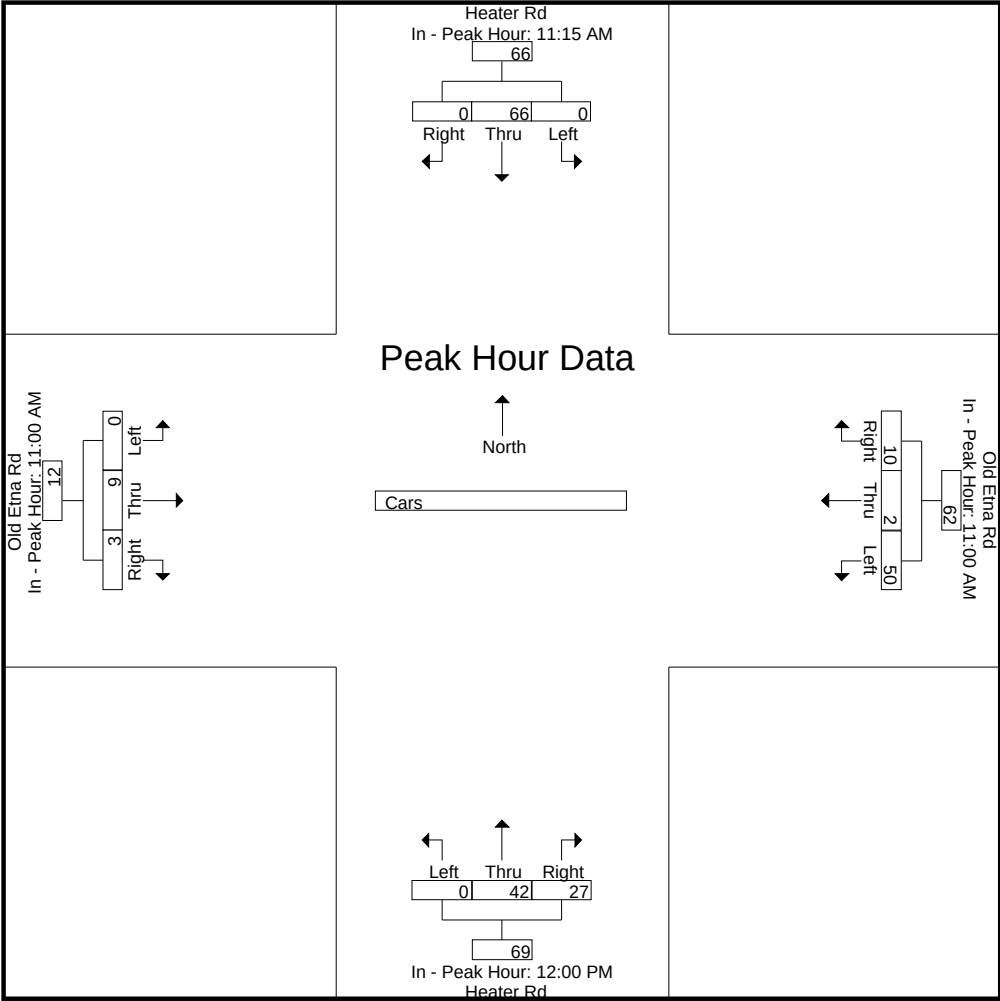


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:15 AM |           |      |           | 11:00 AM  |          |          |           | 12:00 PM |           |           |           | 11:00 AM |          |          |          |
|--------------|----------|-----------|------|-----------|-----------|----------|----------|-----------|----------|-----------|-----------|-----------|----------|----------|----------|----------|
| +0 mins.     | 0        | 16        | 0    | 16        | 13        | 0        | 3        | 16        | 0        | 11        | 3         | 14        | 0        | <b>3</b> | <b>2</b> | <b>5</b> |
| +15 mins.    | 0        | 15        | 0    | 15        | <b>14</b> | 0        | <b>5</b> | <b>19</b> | 0        | 9         | <b>11</b> | <b>20</b> | 0        | 3        | 0        | 3        |
| +30 mins.    | 0        | 17        | 0    | 17        | 13        | 0        | 1        | 14        | 0        | 10        | 6         | 16        | 0        | 2        | 0        | 2        |
| +45 mins.    | 0        | <b>18</b> | 0    | <b>18</b> | 10        | <b>2</b> | 1        | 13        | 0        | <b>12</b> | 7         | 19        | 0        | 1        | 1        | 2        |
| Total Volume | 0        | 66        | 0    | 66        | 50        | 2        | 10       | 62        | 0        | 42        | 27        | 69        | 0        | 9        | 3        | 12       |
| % App. Total | 0        | 100       | 0    |           | 80.6      | 3.2      | 16.1     |           | 0        | 60.9      | 39.1      |           | 0        | 75       | 25       |          |
| PHF          | .000     | .917      | .000 | .917      | .893      | .250     | .500     | .816      | .000     | .875      | .614      | .863      | .000     | .750     | .375     | .600     |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 7

## Groups Printed- Trucks

|             | Heater Rd<br>From North |      |       | Old Etna Rd<br>From East |      |       | Heater Rd<br>From South |      |       | Old Etna Rd<br>From West |      |       |            |
|-------------|-------------------------|------|-------|--------------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                     | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right | Int. Total |
| 11:00 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 11:15 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 11:30 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 11:45 AM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| Total       | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 12:00 PM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 12:15 PM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 12:30 PM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| 12:45 PM    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| Total       | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| Grand Total | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 0          |
| Apprch %    | 0                       | 0    | 0     | 0                        | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     |            |
| Total %     |                         |      |       |                          |      |       |                         |      |       |                          |      |       |            |

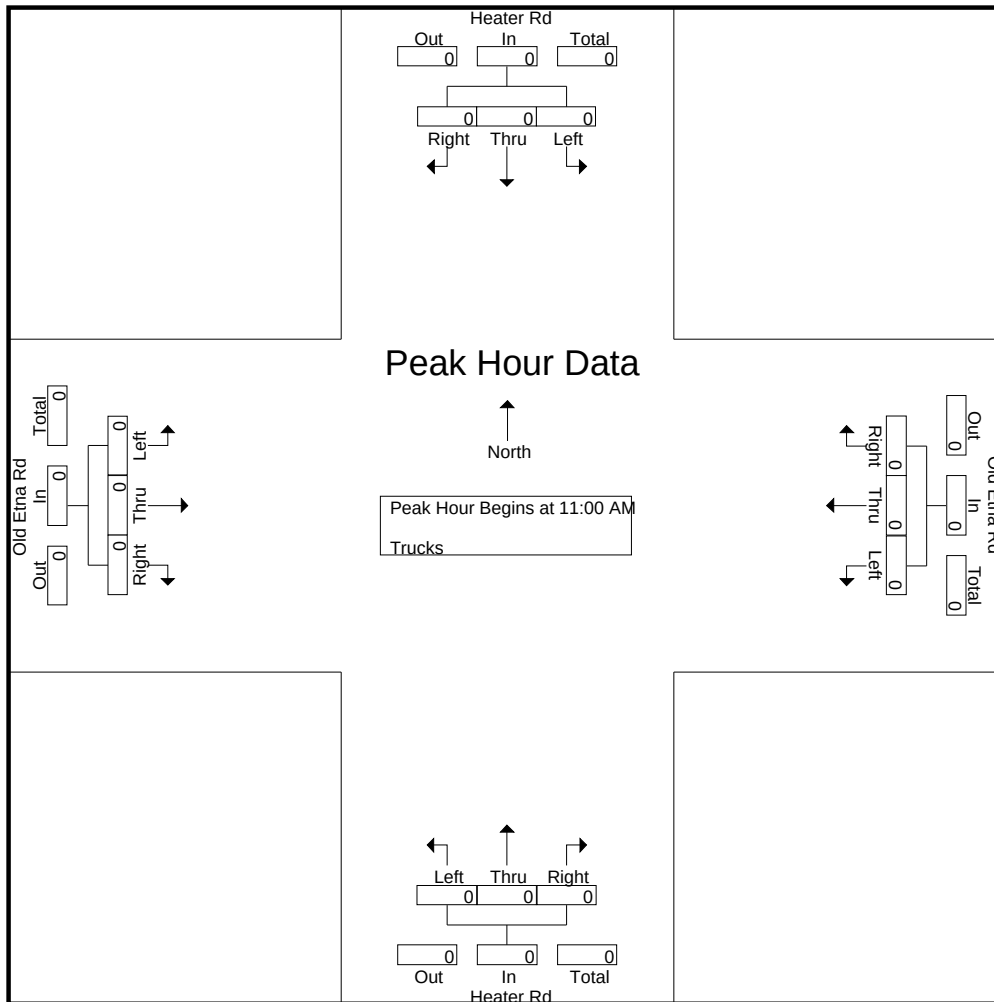
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 11:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| Total Volume                                               | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| % App. Total                                               | 0                       | 0    | 0     |            | 0                        | 0    | 0     |            | 0                       | 0    | 0     |            | 0                        | 0    | 0     |            |            |
| PHF                                                        | .000                    | .000 | .000  | .000       | .000                     | .000 | .000  | .000       | .000                    | .000 | .000  | .000       | .000                     | .000 | .000  | .000       | .000       |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 8

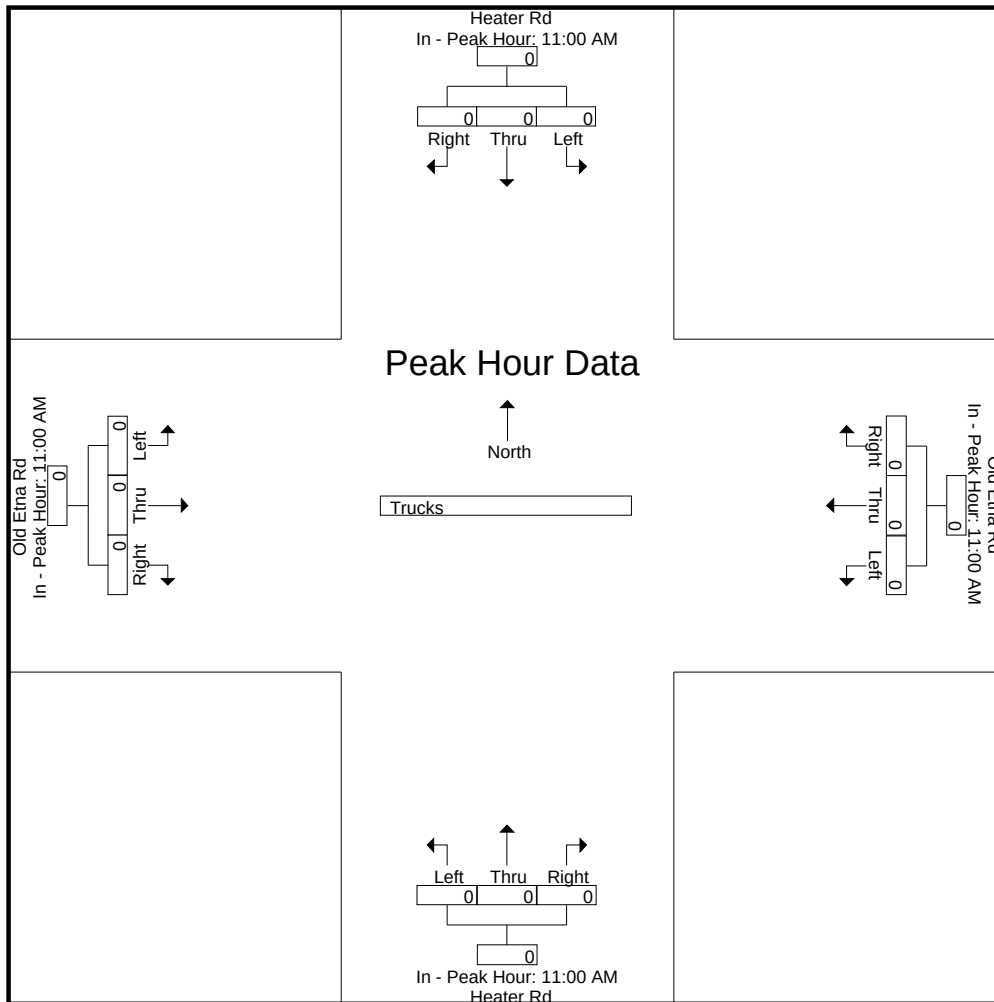


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| % App. Total | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| PHF          | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 |

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Heater Rd<br>From North |      |       |      | Old Etna Rd<br>From East |      |       |      | Heater Rd<br>From South |      |       |      | Old Etna Rd<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|--------------------------|------|-------|------|-------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds |              |              |            |
| 11:00 AM    | 0                       | 0    | 0     | 0    | 0                        | 2    | 0     | 2    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 3            | 2            | 5          |
| 11:15 AM    | 0                       | 0    | 0     | 0    | 0                        | 1    | 0     | 2    | 0                       | 0    | 0     | 7    | 0                        | 1    | 0     | 0    | 9            | 2            | 11         |
| 11:30 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 0    | 3            | 0            | 3          |
| 11:45 AM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 2    | 0                       | 0    | 0     | 2    | 0                        | 0    | 0     | 0    | 4            | 0            | 4          |
| Total       | 0                       | 0    | 0     | 0    | 0                        | 3    | 0     | 6    | 0                       | 0    | 0     | 13   | 0                        | 1    | 0     | 0    | 19           | 4            | 23         |
| 12:00 PM    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 3    | 0                        | 0    | 0     | 1    | 5            | 0            | 5          |
| 12:15 PM    | 0                       | 1    | 0     | 0    | 0                        | 1    | 0     | 1    | 0                       | 0    | 0     | 1    | 0                        | 2    | 0     | 0    | 2            | 4            | 6          |
| 12:30 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| 12:45 PM    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                       | 1    | 0     | 1    | 0                        | 1    | 0     | 1    | 0                       | 0    | 0     | 6    | 0                        | 2    | 0     | 1    | 9            | 4            | 13         |
| Grand Total | 0                       | 1    | 0     | 1    | 0                        | 4    | 0     | 7    | 0                       | 0    | 0     | 19   | 0                        | 3    | 0     | 1    | 28           | 8            | 36         |
| Apprch %    | 0                       | 100  | 0     |      | 0                        | 100  | 0     |      | 0                       | 0    | 0     |      | 0                        | 100  | 0     |      |              |              |            |
| Total %     | 0                       | 12.5 | 0     |      | 0                        | 50   | 0     |      | 0                       | 0    | 0     |      | 0                        | 37.5 | 0     |      | 77.8         | 22.2         |            |

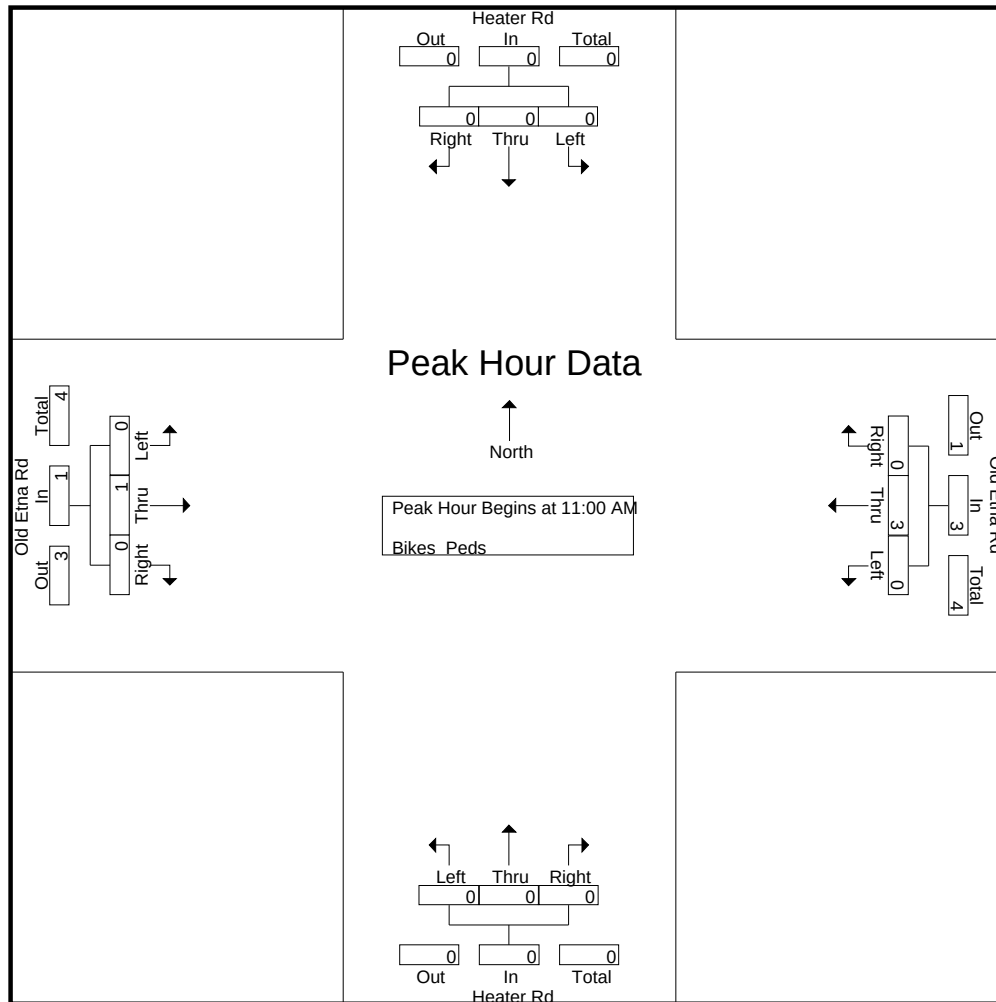
|                                                            | Heater Rd<br>From North |      |       |            | Old Etna Rd<br>From East |      |       |            | Heater Rd<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |   |  |
|------------------------------------------------------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|---|--|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |   |  |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |   |  |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                          |      |       |            |                         |      |       |            |                          |      |       |            |            |   |  |
| 11:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 2    | 0     | 2          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 2 |  |
| 11:15 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 0          | 1          | 2 |  |
| 11:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0 |  |
| 11:45 AM                                                   | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          | 0 |  |
| Total Volume                                               | 0                       | 0    | 0     | 0          | 0                        | 3    | 0     | 3          | 0                       | 0    | 0     | 0          | 0                        | 1    | 0     | 1          | 4          |   |  |
| % App. Total                                               | 0                       | 0    | 0     |            | 0                        | 100  | 0     |            | 0                       | 0    | 0     |            | 0                        | 100  | 0     |            |            |   |  |
| PHF                                                        | .000                    | .000 | .000  | .000       | .000                     | .375 | .000  | .375       | .000                    | .000 | .000  | .000       | .000                     | .250 | .000  | .250       | .500       |   |  |

# Accurate Counts

978-664-2565

N/S Street : Heater Road  
E/W Street : Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S4  
Site Code : 52933004  
Start Date : 11/12/2022  
Page No : 11

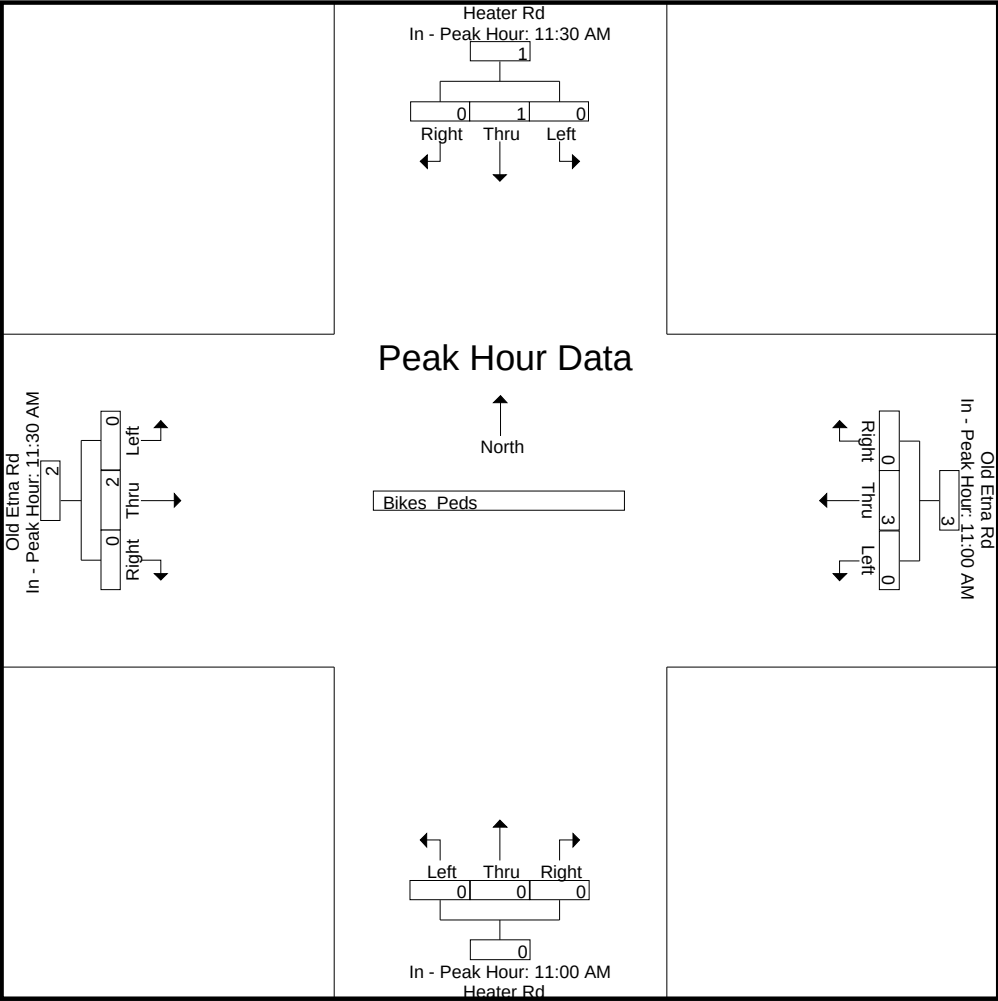


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:30 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:30 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 1    | 0    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    |
| Total Volume | 0        | 1    | 0    | 1    | 0        | 3    | 0    | 3    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    |
| % App. Total | 0        | 100  | 0    |      | 0        | 100  | 0    |      | 0        | 0    | 0    |      | 0        | 100  | 0    |      |
| PHF          | .000     | .250 | .000 | .250 | .000     | .375 | .000 | .375 | .000     | .000 | .000 | .000 | .000     | .250 | .000 | .250 |

N/S Street : Heater Road  
 E/W Street : Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S4  
 Site Code : 52933004  
 Start Date : 11/12/2022  
 Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

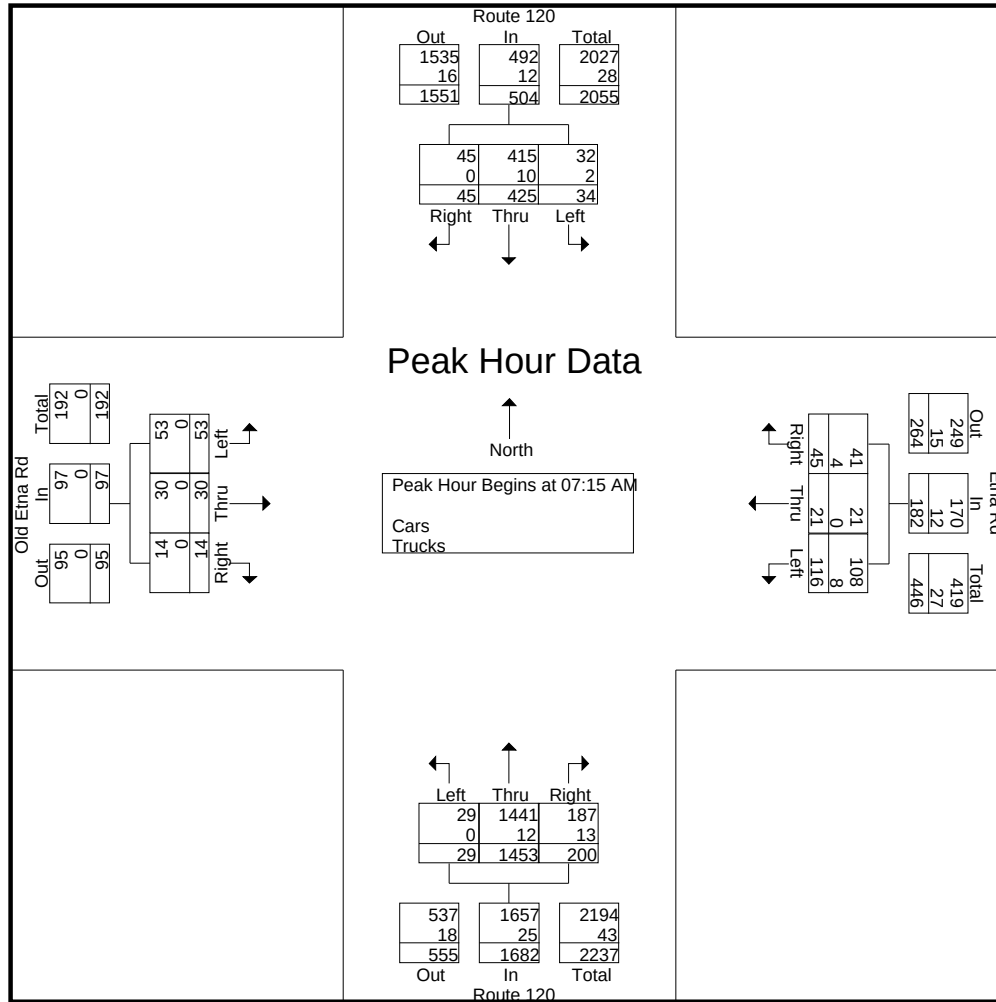
|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 07:00 AM    | 5                       | 68   | 5     | 72                   | 8    | 6     | 4                       | 251  | 41    | 7                        | 5    | 3     | 475        |
| 07:15 AM    | 4                       | 88   | 12    | 33                   | 4    | 10    | 12                      | 317  | 40    | 10                       | 8    | 2     | 540        |
| 07:30 AM    | 6                       | 111  | 8     | 32                   | 4    | 12    | 4                       | 389  | 43    | 15                       | 3    | 5     | 632        |
| 07:45 AM    | 11                      | 108  | 10    | 27                   | 6    | 11    | 7                       | 412  | 69    | 17                       | 11   | 3     | 692        |
| Total       | 26                      | 375  | 35    | 164                  | 22   | 39    | 27                      | 1369 | 193   | 49                       | 27   | 13    | 2339       |
| 08:00 AM    | 13                      | 118  | 15    | 24                   | 7    | 12    | 6                       | 335  | 48    | 11                       | 8    | 4     | 601        |
| 08:15 AM    | 12                      | 77   | 10    | 21                   | 3    | 7     | 5                       | 314  | 58    | 8                        | 4    | 2     | 521        |
| 08:30 AM    | 14                      | 90   | 6     | 34                   | 0    | 13    | 11                      | 261  | 37    | 9                        | 2    | 8     | 485        |
| 08:45 AM    | 11                      | 89   | 10    | 18                   | 2    | 16    | 8                       | 236  | 38    | 8                        | 3    | 8     | 447        |
| Total       | 50                      | 374  | 41    | 97                   | 12   | 48    | 30                      | 1146 | 181   | 36                       | 17   | 22    | 2054       |
| Grand Total | 76                      | 749  | 76    | 261                  | 34   | 87    | 57                      | 2515 | 374   | 85                       | 44   | 35    | 4393       |
| Apprch %    | 8.4                     | 83.1 | 8.4   | 68.3                 | 8.9  | 22.8  | 1.9                     | 85.4 | 12.7  | 51.8                     | 26.8 | 21.3  |            |
| Total %     | 1.7                     | 17   | 1.7   | 5.9                  | 0.8  | 2     | 1.3                     | 57.3 | 8.5   | 1.9                      | 1    | 0.8   |            |
| Cars        | 67                      | 733  | 76    | 245                  | 34   | 77    | 57                      | 2490 | 354   | 85                       | 43   | 35    | 4296       |
| % Cars      | 88.2                    | 97.9 | 100   | 93.9                 | 100  | 88.5  | 100                     | 99   | 94.7  | 100                      | 97.7 | 100   | 97.8       |
| Trucks      | 9                       | 16   | 0     | 16                   | 0    | 10    | 0                       | 25   | 20    | 0                        | 1    | 0     | 97         |
| % Trucks    | 11.8                    | 2.1  | 0     | 6.1                  | 0    | 11.5  | 0                       | 1    | 5.3   | 0                        | 2.3  | 0     | 2.2        |

|                                                            | Route 120<br>From North |            |           |            | Etna Rd<br>From East |          |           |            | Route 120<br>From South |            |           |            | Old Etna Rd<br>From West |           |          |            |            |
|------------------------------------------------------------|-------------------------|------------|-----------|------------|----------------------|----------|-----------|------------|-------------------------|------------|-----------|------------|--------------------------|-----------|----------|------------|------------|
| Start Time                                                 | Left                    | Thru       | Right     | App. Total | Left                 | Thru     | Right     | App. Total | Left                    | Thru       | Right     | App. Total | Left                     | Thru      | Right    | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |           |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |           |          |            |            |
| 07:15 AM                                                   | 4                       | 88         | 12        | 104        | <b>33</b>            | 4        | 10        | 47         | <b>12</b>               | 317        | 40        | 369        | 10                       | 8         | 2        | 20         | 540        |
| 07:30 AM                                                   | 6                       | 111        | 8         | 125        | 32                   | 4        | <b>12</b> | <b>48</b>  | 4                       | 389        | 43        | 436        | 15                       | 3         | <b>5</b> | 23         | 632        |
| 07:45 AM                                                   | 11                      | 108        | 10        | 129        | 27                   | 6        | 11        | 44         | 7                       | <b>412</b> | <b>69</b> | <b>488</b> | <b>17</b>                | <b>11</b> | 3        | <b>31</b>  | <b>692</b> |
| 08:00 AM                                                   | <b>13</b>               | <b>118</b> | <b>15</b> | <b>146</b> | 24                   | <b>7</b> | 12        | 43         | 6                       | 335        | 48        | 389        | 11                       | 8         | 4        | 23         | 601        |
| Total Volume                                               | 34                      | 425        | 45        | 504        | 116                  | 21       | 45        | 182        | 29                      | 1453       | 200       | 1682       | 53                       | 30        | 14       | 97         | 2465       |
| % App. Total                                               | 6.7                     | 84.3       | 8.9       |            | 63.7                 | 11.5     | 24.7      |            | 1.7                     | 86.4       | 11.9      |            | 54.6                     | 30.9      | 14.4     |            |            |
| PHF                                                        | .654                    | .900       | .750      | .863       | .879                 | .750     | .938      | .948       | .604                    | .882       | .725      | .862       | .779                     | .682      | .700     | .782       | .891       |
| Cars                                                       | 32                      | 415        | 45        | 492        | 108                  | 21       | 41        | 170        | 29                      | 1441       | 187       | 1657       | 53                       | 30        | 14       | 97         | 2416       |
| % Cars                                                     | 94.1                    | 97.6       | 100       | 97.6       | 93.1                 | 100      | 91.1      | 93.4       | 100                     | 99.2       | 93.5      | 98.5       | 100                      | 100       | 100      | 100        | 98.0       |
| Trucks                                                     | 2                       | 10         | 0         | 12         | 8                    | 0        | 4         | 12         | 0                       | 12         | 13        | 25         | 0                        | 0         | 0        | 0          | 49         |
| % Trucks                                                   | 5.9                     | 2.4        | 0         | 2.4        | 6.9                  | 0        | 8.9       | 6.6        | 0                       | 0.8        | 6.5       | 1.5        | 0                        | 0         | 0        | 0          | 2.0        |

**Accurate Counts**  
978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 2

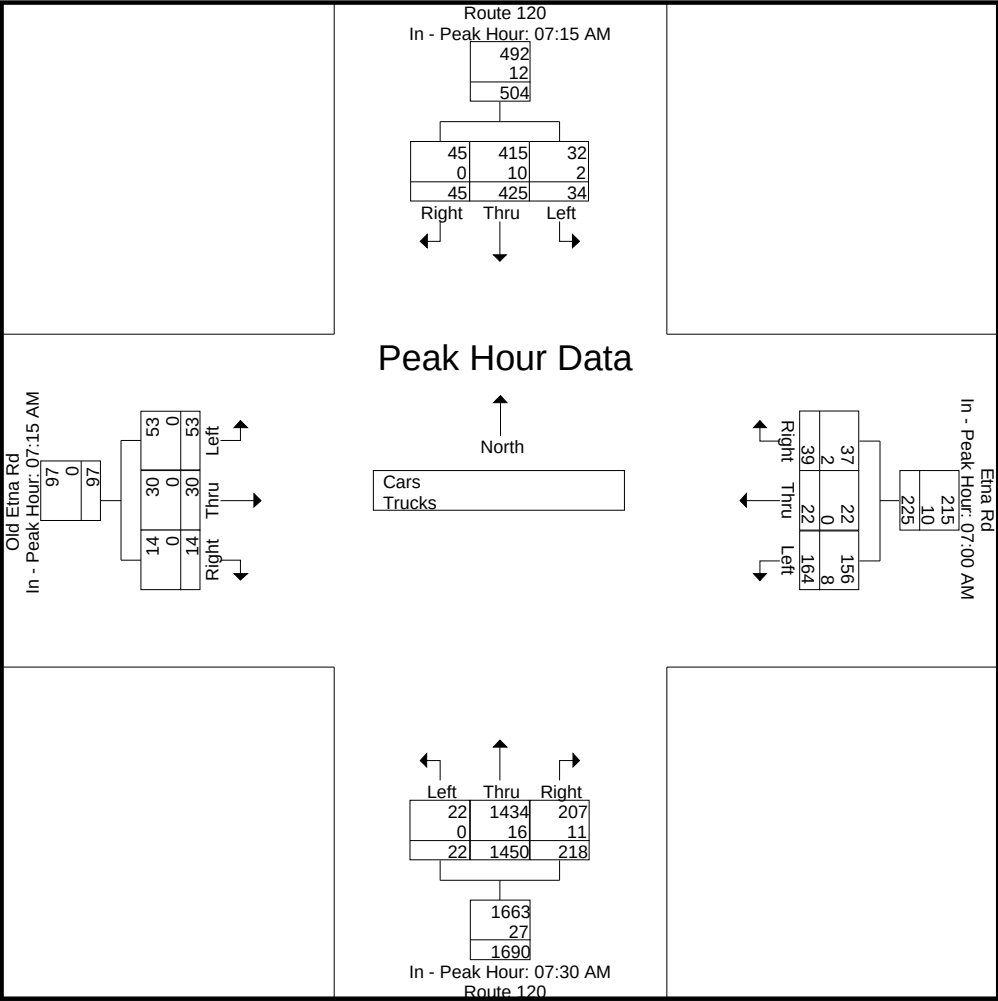


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:15 AM  |            |           |            | 07:00 AM  |          |           |           | 07:30 AM |            |           |            | 07:15 AM  |           |          |           |
|--------------|-----------|------------|-----------|------------|-----------|----------|-----------|-----------|----------|------------|-----------|------------|-----------|-----------|----------|-----------|
| +0 mins.     | 4         | 88         | 12        | 104        | <b>72</b> | <b>8</b> | 6         | <b>86</b> | 4        | 389        | 43        | 436        | 10        | 8         | 2        | 20        |
| +15 mins.    | 6         | 111        | 8         | 125        | 33        | 4        | 10        | 47        | <b>7</b> | <b>412</b> | <b>69</b> | <b>488</b> | 15        | 3         | <b>5</b> | 23        |
| +30 mins.    | 11        | 108        | 10        | 129        | 32        | 4        | <b>12</b> | 48        | 6        | 335        | 48        | 389        | <b>17</b> | <b>11</b> | 3        | <b>31</b> |
| +45 mins.    | <b>13</b> | <b>118</b> | <b>15</b> | <b>146</b> | 27        | 6        | 11        | 44        | 5        | 314        | 58        | 377        | 11        | 8         | 4        | 23        |
| Total Volume | 34        | 425        | 45        | 504        | 164       | 22       | 39        | 225       | 22       | 1450       | 218       | 1690       | 53        | 30        | 14       | 97        |
| % App. Total | 6.7       | 84.3       | 8.9       |            | 72.9      | 9.8      | 17.3      |           | 1.3      | 85.8       | 12.9      |            | 54.6      | 30.9      | 14.4     |           |
| PHF          | .654      | .900       | .750      | .863       | .569      | .688     | .813      | .654      | .786     | .880       | .790      | .866       | .779      | .682      | .700     | .782      |
| Cars         | 32        | 415        | 45        | 492        | 156       | 22       | 37        | 215       | 22       | 1434       | 207       | 1663       | 53        | 30        | 14       | 97        |
| % Cars       | 94.1      | 97.6       | 100       | 97.6       | 95.1      | 100      | 94.9      | 95.6      | 100      | 98.9       | 95        | 98.4       | 100       | 100       | 100      | 100       |
| Trucks       | 2         | 10         | 0         | 12         | 8         | 0        | 2         | 10        | 0        | 16         | 11        | 27         | 0         | 0         | 0        | 0         |
| % Trucks     | 5.9       | 2.4        | 0         | 2.4        | 4.9       | 0        | 5.1       | 4.4       | 0        | 1.1        | 5         | 1.6        | 0         | 0         | 0        | 0         |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 07:00 AM    | 5                       | 68   | 5     | 71                   | 8    | 5     | 4                       | 251  | 40    | 7                        | 4    | 3     | 471        |
| 07:15 AM    | 4                       | 87   | 12    | 32                   | 4    | 10    | 12                      | 315  | 37    | 10                       | 8    | 2     | 533        |
| 07:30 AM    | 5                       | 109  | 8     | 28                   | 4    | 11    | 4                       | 386  | 41    | 15                       | 3    | 5     | 619        |
| 07:45 AM    | 10                      | 105  | 10    | 25                   | 6    | 11    | 7                       | 407  | 64    | 17                       | 11   | 3     | 676        |
| Total       | 24                      | 369  | 35    | 156                  | 22   | 37    | 27                      | 1359 | 182   | 49                       | 26   | 13    | 2299       |
| 08:00 AM    | 13                      | 114  | 15    | 23                   | 7    | 9     | 6                       | 333  | 45    | 11                       | 8    | 4     | 588        |
| 08:15 AM    | 10                      | 76   | 10    | 21                   | 3    | 6     | 5                       | 308  | 57    | 8                        | 4    | 2     | 510        |
| 08:30 AM    | 12                      | 89   | 6     | 29                   | 0    | 12    | 11                      | 255  | 35    | 9                        | 2    | 8     | 468        |
| 08:45 AM    | 8                       | 85   | 10    | 16                   | 2    | 13    | 8                       | 235  | 35    | 8                        | 3    | 8     | 431        |
| Total       | 43                      | 364  | 41    | 89                   | 12   | 40    | 30                      | 1131 | 172   | 36                       | 17   | 22    | 1997       |
| Grand Total | 67                      | 733  | 76    | 245                  | 34   | 77    | 57                      | 2490 | 354   | 85                       | 43   | 35    | 4296       |
| Apprch %    | 7.6                     | 83.7 | 8.7   | 68.8                 | 9.6  | 21.6  | 2                       | 85.8 | 12.2  | 52.1                     | 26.4 | 21.5  |            |
| Total %     | 1.6                     | 17.1 | 1.8   | 5.7                  | 0.8  | 1.8   | 1.3                     | 58   | 8.2   | 2                        | 1    | 0.8   |            |

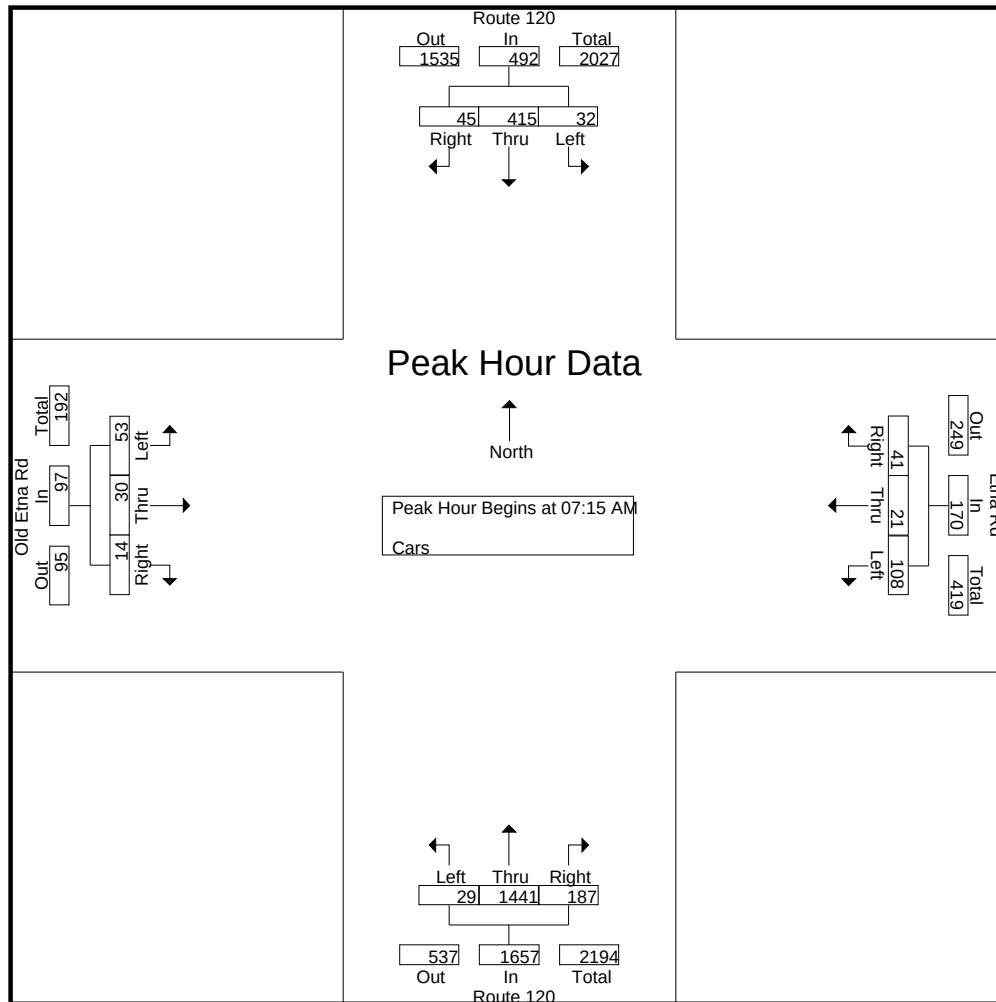
|                                                            | Route 120<br>From North |            |           |            | Etna Rd<br>From East |          |           |            | Route 120<br>From South |            |           |            | Old Etna Rd<br>From West |           |          |            | Int. Total |
|------------------------------------------------------------|-------------------------|------------|-----------|------------|----------------------|----------|-----------|------------|-------------------------|------------|-----------|------------|--------------------------|-----------|----------|------------|------------|
| Start Time                                                 | Left                    | Thru       | Right     | App. Total | Left                 | Thru     | Right     | App. Total | Left                    | Thru       | Right     | App. Total | Left                     | Thru      | Right    | App. Total |            |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |           |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |           |          |            |            |
| 07:15 AM                                                   | 4                       | 87         | 12        | 103        | <b>32</b>            | 4        | 10        | <b>46</b>  | <b>12</b>               | 315        | 37        | 364        | 10                       | 8         | 2        | 20         | 533        |
| 07:30 AM                                                   | 5                       | 109        | 8         | 122        | 28                   | 4        | <b>11</b> | 43         | 4                       | 386        | 41        | 431        | 15                       | 3         | <b>5</b> | 23         | 619        |
| 07:45 AM                                                   | 10                      | 105        | 10        | 125        | 25                   | 6        | 11        | 42         | 7                       | <b>407</b> | <b>64</b> | <b>478</b> | <b>17</b>                | <b>11</b> | 3        | <b>31</b>  | <b>676</b> |
| 08:00 AM                                                   | <b>13</b>               | <b>114</b> | <b>15</b> | <b>142</b> | 23                   | <b>7</b> | 9         | 39         | 6                       | 333        | 45        | 384        | 11                       | 8         | 4        | 23         | 588        |
| Total Volume                                               | 32                      | 415        | 45        | 492        | 108                  | 21       | 41        | 170        | 29                      | 1441       | 187       | 1657       | 53                       | 30        | 14       | 97         | 2416       |
| % App. Total                                               | 6.5                     | 84.3       | 9.1       |            | 63.5                 | 12.4     | 24.1      |            | 1.8                     | 87         | 11.3      |            | 54.6                     | 30.9      | 14.4     |            |            |
| PHF                                                        | .615                    | .910       | .750      | .866       | .844                 | .750     | .932      | .924       | .604                    | .885       | .730      | .867       | .779                     | .682      | .700     | .782       | .893       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 5

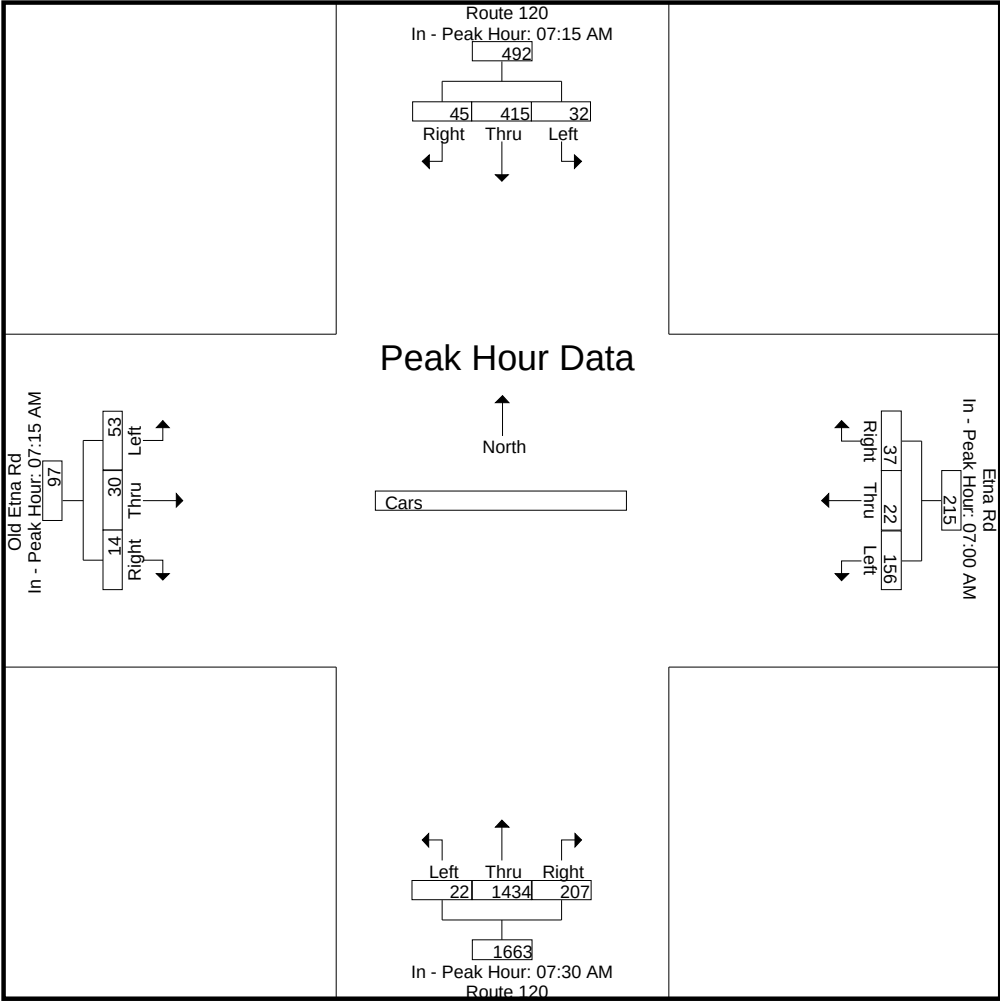


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:15 AM  |            |           |            | 07:00 AM  |          |           |           | 07:30 AM |            |           |            | 07:15 AM  |           |          |           |
|--------------|-----------|------------|-----------|------------|-----------|----------|-----------|-----------|----------|------------|-----------|------------|-----------|-----------|----------|-----------|
| +0 mins.     | 4         | 87         | 12        | 103        | <b>71</b> | <b>8</b> | 5         | <b>84</b> | 4        | 386        | 41        | 431        | 10        | 8         | 2        | 20        |
| +15 mins.    | 5         | 109        | 8         | 122        | 32        | 4        | 10        | 46        | <b>7</b> | <b>407</b> | <b>64</b> | <b>478</b> | 15        | 3         | <b>5</b> | 23        |
| +30 mins.    | 10        | 105        | 10        | 125        | 28        | 4        | <b>11</b> | 43        | 6        | 333        | 45        | 384        | <b>17</b> | <b>11</b> | 3        | <b>31</b> |
| +45 mins.    | <b>13</b> | <b>114</b> | <b>15</b> | <b>142</b> | 25        | 6        | 11        | 42        | 5        | 308        | 57        | 370        | 11        | 8         | 4        | 23        |
| Total Volume | 32        | 415        | 45        | 492        | 156       | 22       | 37        | 215       | 22       | 1434       | 207       | 1663       | 53        | 30        | 14       | 97        |
| % App. Total | 6.5       | 84.3       | 9.1       |            | 72.6      | 10.2     | 17.2      |           | 1.3      | 86.2       | 12.4      |            | 54.6      | 30.9      | 14.4     |           |
| PHF          | .615      | .910       | .750      | .866       | .549      | .688     | .841      | .640      | .786     | .881       | .809      | .870       | .779      | .682      | .700     | .782      |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 7

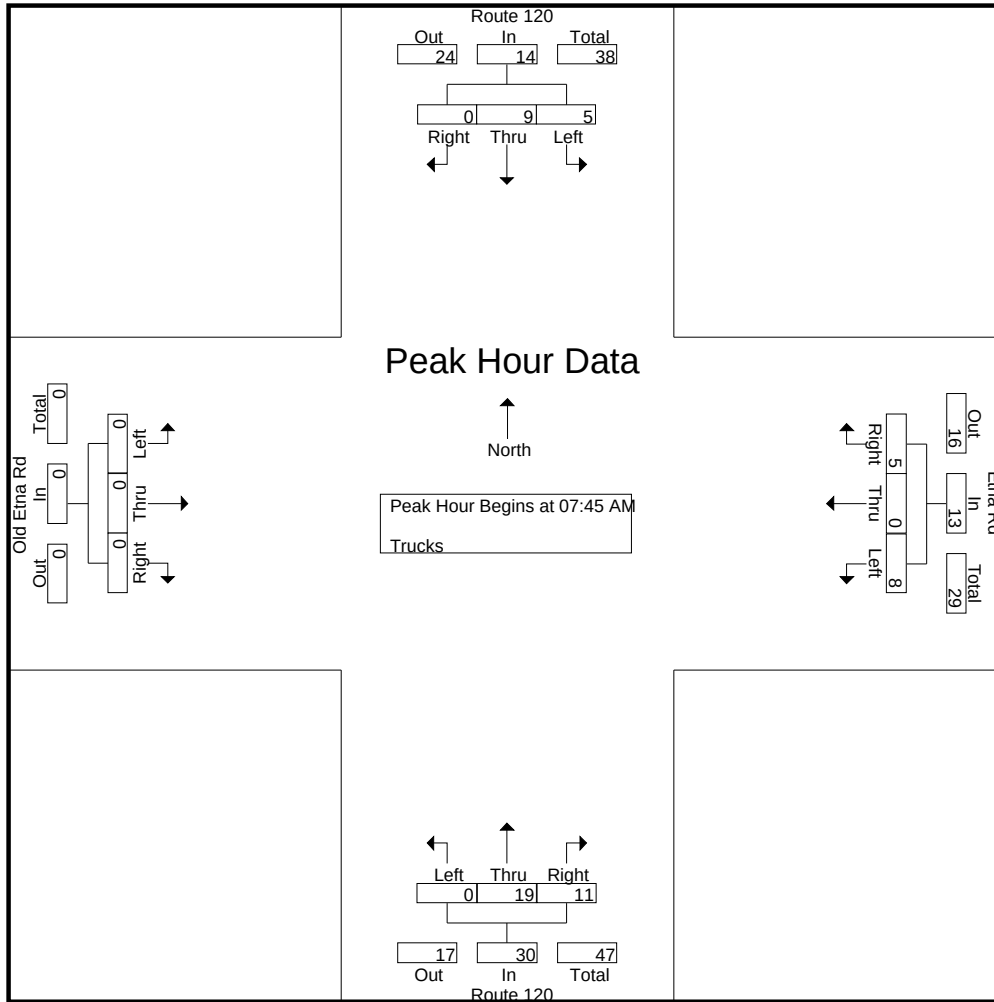
## Groups Printed- Trucks

|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 07:00 AM    | 0                       | 0    | 0     | 1                    | 0    | 1     | 0                       | 0    | 1     | 0                        | 1    | 0     | 4          |
| 07:15 AM    | 0                       | 1    | 0     | 1                    | 0    | 0     | 0                       | 2    | 3     | 0                        | 0    | 0     | 7          |
| 07:30 AM    | 1                       | 2    | 0     | 4                    | 0    | 1     | 0                       | 3    | 2     | 0                        | 0    | 0     | 13         |
| 07:45 AM    | 1                       | 3    | 0     | 2                    | 0    | 0     | 0                       | 5    | 5     | 0                        | 0    | 0     | 16         |
| Total       | 2                       | 6    | 0     | 8                    | 0    | 2     | 0                       | 10   | 11    | 0                        | 1    | 0     | 40         |
| 08:00 AM    | 0                       | 4    | 0     | 1                    | 0    | 3     | 0                       | 2    | 3     | 0                        | 0    | 0     | 13         |
| 08:15 AM    | 2                       | 1    | 0     | 0                    | 0    | 1     | 0                       | 6    | 1     | 0                        | 0    | 0     | 11         |
| 08:30 AM    | 2                       | 1    | 0     | 5                    | 0    | 1     | 0                       | 6    | 2     | 0                        | 0    | 0     | 17         |
| 08:45 AM    | 3                       | 4    | 0     | 2                    | 0    | 3     | 0                       | 1    | 3     | 0                        | 0    | 0     | 16         |
| Total       | 7                       | 10   | 0     | 8                    | 0    | 8     | 0                       | 15   | 9     | 0                        | 0    | 0     | 57         |
| Grand Total | 9                       | 16   | 0     | 16                   | 0    | 10    | 0                       | 25   | 20    | 0                        | 1    | 0     | 97         |
| Apprch %    | 36                      | 64   | 0     | 61.5                 | 0    | 38.5  | 0                       | 55.6 | 44.4  | 0                        | 100  | 0     |            |
| Total %     | 9.3                     | 16.5 | 0     | 16.5                 | 0    | 10.3  | 0                       | 25.8 | 20.6  | 0                        | 1    | 0     |            |

|                                                            | Route 120<br>From North |      |       |            | Etna Rd<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            | Int. Total |
|------------------------------------------------------------|-------------------------|------|-------|------------|----------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                 | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |            |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:45 AM       |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 07:45 AM                                                   | 1                       | 3    | 0     | 4          | 2                    | 0    | 0     | 2          | 0                       | 5    | 5     | 10         | 0                        | 0    | 0     | 0          | 16         |
| 08:00 AM                                                   | 0                       | 4    | 0     | 4          | 1                    | 0    | 3     | 4          | 0                       | 2    | 3     | 5          | 0                        | 0    | 0     | 0          | 13         |
| 08:15 AM                                                   | 2                       | 1    | 0     | 3          | 0                    | 0    | 1     | 1          | 0                       | 6    | 1     | 7          | 0                        | 0    | 0     | 0          | 11         |
| 08:30 AM                                                   | 2                       | 1    | 0     | 3          | 5                    | 0    | 1     | 6          | 0                       | 6    | 2     | 8          | 0                        | 0    | 0     | 0          | 17         |
| Total Volume                                               | 5                       | 9    | 0     | 14         | 8                    | 0    | 5     | 13         | 0                       | 19   | 11    | 30         | 0                        | 0    | 0     | 0          | 57         |
| % App. Total                                               | 35.7                    | 64.3 | 0     |            | 61.5                 | 0    | 38.5  |            | 0                       | 63.3 | 36.7  |            | 0                        | 0    | 0     |            |            |
| PHF                                                        | .625                    | .563 | .000  | .875       | .400                 | .000 | .417  | .542       | .000                    | .792 | .550  | .750       | .000                     | .000 | .000  | .000       | .838       |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 8

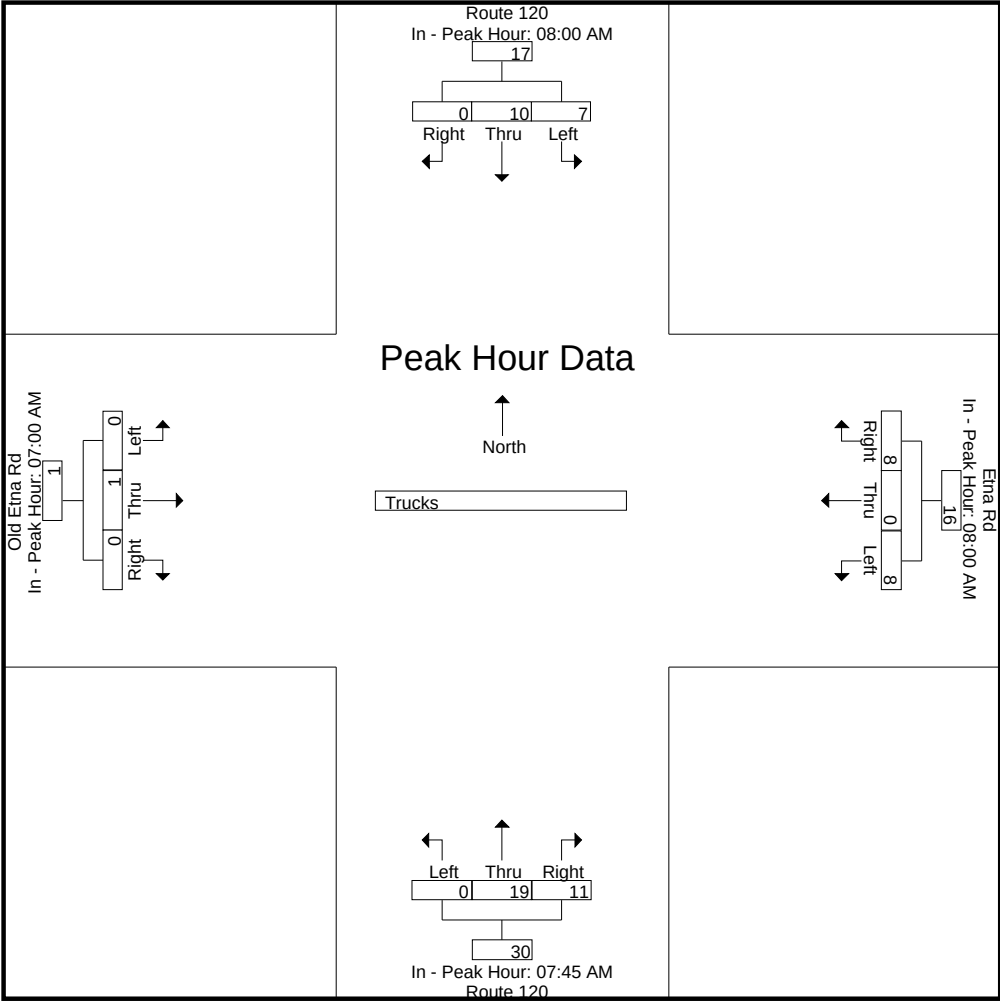


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 08:00 AM |          |      |          | 08:00 AM |      |          |          | 07:45 AM |          |          |           | 07:00 AM |          |      |          |
|--------------|----------|----------|------|----------|----------|------|----------|----------|----------|----------|----------|-----------|----------|----------|------|----------|
| +0 mins.     | 0        | <b>4</b> | 0    | 4        | 1        | 0    | <b>3</b> | 4        | 0        | 5        | <b>5</b> | <b>10</b> | 0        | <b>1</b> | 0    | <b>1</b> |
| +15 mins.    | 2        | 1        | 0    | 3        | 0        | 0    | 1        | 1        | 0        | 2        | 3        | 5         | 0        | 0        | 0    | 0        |
| +30 mins.    | 2        | 1        | 0    | 3        | <b>5</b> | 0    | 1        | <b>6</b> | 0        | <b>6</b> | 1        | 7         | 0        | 0        | 0    | 0        |
| +45 mins.    | <b>3</b> | 4        | 0    | <b>7</b> | 2        | 0    | 3        | 5        | 0        | 6        | 2        | 8         | 0        | 0        | 0    | 0        |
| Total Volume | 7        | 10       | 0    | 17       | 8        | 0    | 8        | 16       | 0        | 19       | 11       | 30        | 0        | 1        | 0    | 1        |
| % App. Total | 41.2     | 58.8     | 0    |          | 50       | 0    | 50       |          | 0        | 63.3     | 36.7     |           | 0        | 100      | 0    |          |
| PHF          | .583     | .625     | .000 | .607     | .400     | .000 | .667     | .667     | .000     | .792     | .550     | .750      | .000     | .250     | .000 | .250     |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Route 120<br>From North |      |       |      | Etna Rd<br>From East |      |       |      | Route 120<br>From South |      |       |      | Old Etna Rd<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|----------------------|------|-------|------|-------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                 | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds |              |              |            |
| 07:00 AM    | 0                       | 0    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| 07:15 AM    | 0                       | 0    | 1     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 1            | 1          |
| 07:30 AM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 07:45 AM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0    | 1     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 1            | 2          |
| 08:00 AM    | 0                       | 0    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| 08:15 AM    | 0                       | 1    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 1            | 1          |
| 08:30 AM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 08:45 AM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 1    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 1            | 2          |
| Grand Total | 0                       | 1    | 1     | 2    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 2            | 2            | 4          |
| Apprch %    | 0                       | 50   | 50    |      | 0                    | 0    | 0     |      | 0                       | 0    | 0     |      | 0                        | 0    | 0     |      |              |              |            |
| Total %     | 0                       | 50   | 50    |      | 0                    | 0    | 0     |      | 0                       | 0    | 0     |      | 0                        | 0    | 0     |      | 50           | 50           |            |

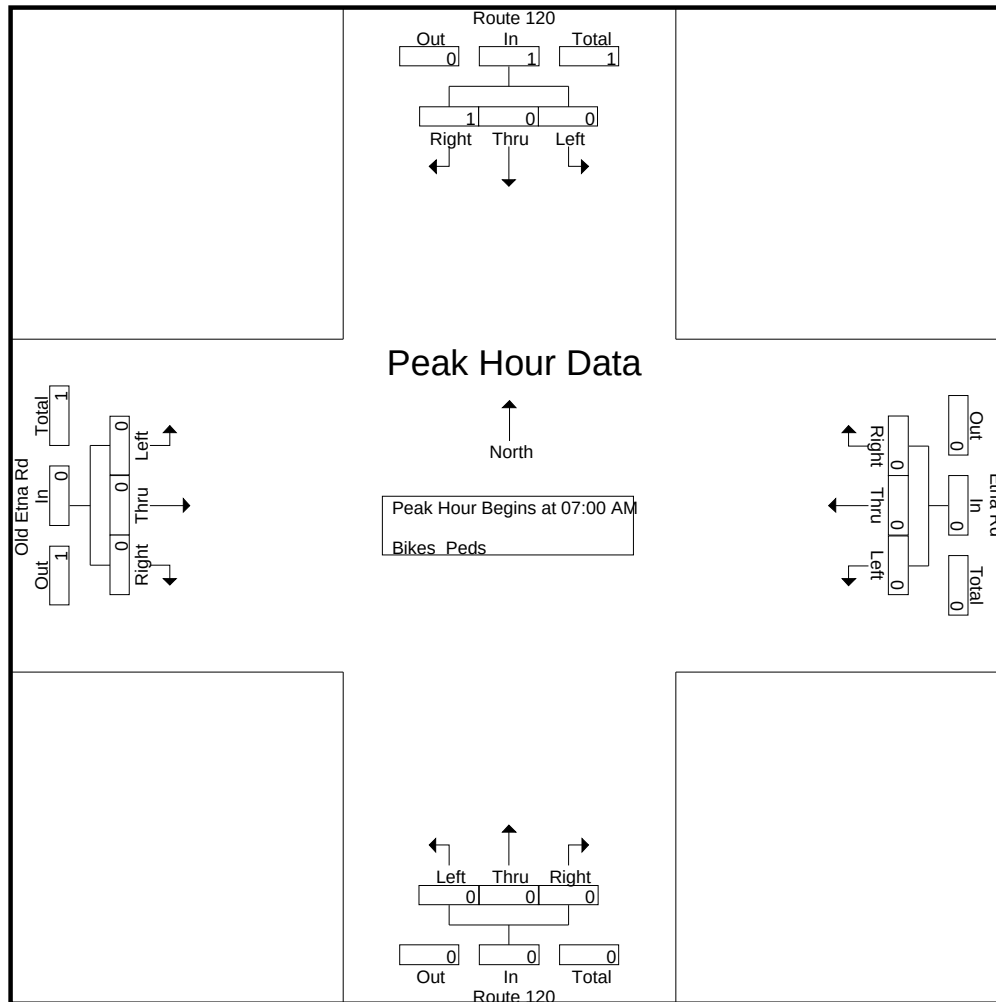
|                                                            | Route 120<br>From North |      |       |            | Etna Rd<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|----------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                 | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 07:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| 07:15 AM                                                   | 0                       | 0    | 1     | 1          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 1          |
| 07:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| 07:45 AM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0          |
| Total Volume                                               | 0                       | 0    | 1     | 1          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 1          |
| % App. Total                                               | 0                       | 0    | 100   |            | 0                    | 0    | 0     |            | 0                       | 0    | 0     |            | 0                        | 0    | 0     |            |            |
| PHF                                                        | .000                    | .000 | .250  | .250       | .000                 | .000 | .000  | .000       | .000                    | .000 | .000  | .000       | .000                     | .000 | .000  | .000       | .250       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933005  
 Site Code : 52933005  
 Start Date : 11/10/2022  
 Page No : 11

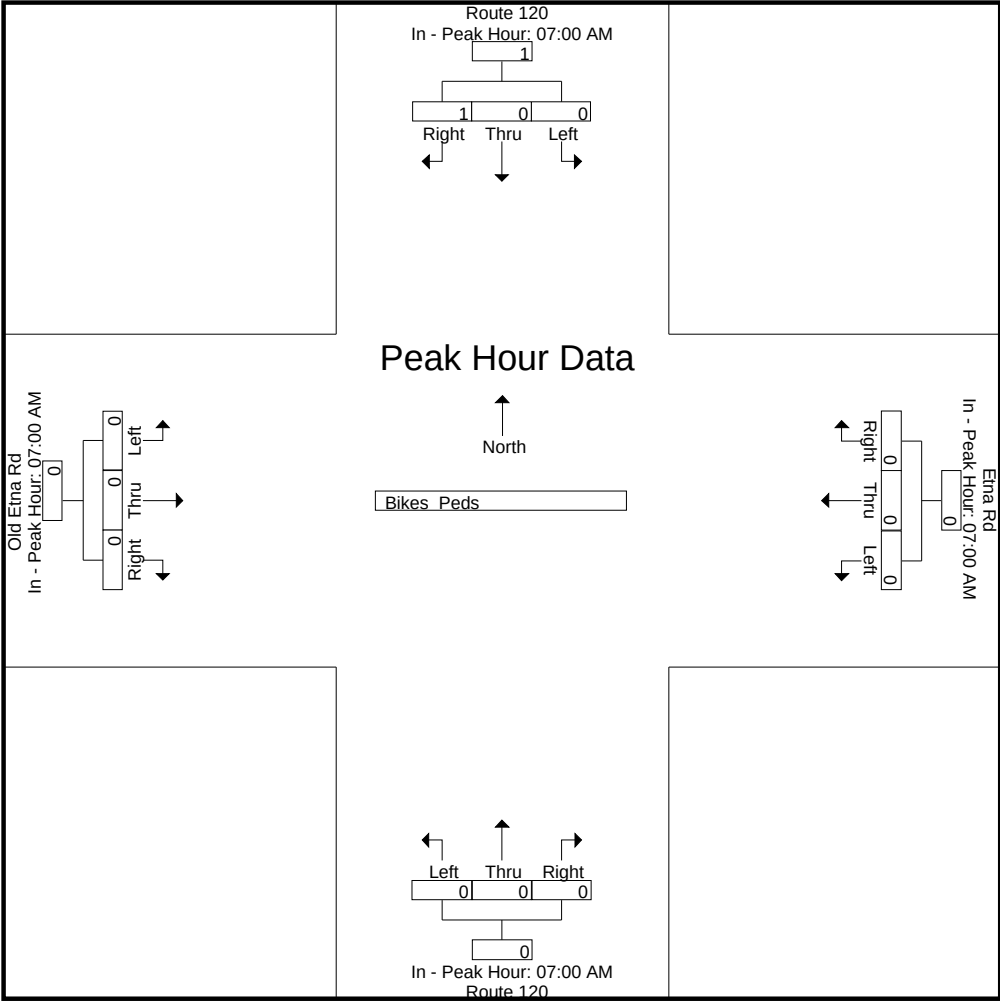


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      | 07:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 1    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 0        | 0    | 1    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| % App. Total | 0        | 0    | 100  |      | 0        | 0    | 0    |      | 0        | 0    | 0    |      | 0        | 0    | 0    |      |
| PHF          | .000     | .000 | .250 | .250 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 02:00 PM    | 10                      | 192  | 10    | 39                   | 2    | 10    | 3                       | 152  | 35    | 4                        | 2    | 13    | 472        |
| 02:15 PM    | 6                       | 191  | 13    | 39                   | 5    | 13    | 10                      | 146  | 28    | 11                       | 3    | 8     | 473        |
| 02:30 PM    | 7                       | 203  | 9     | 74                   | 5    | 14    | 12                      | 143  | 44    | 13                       | 8    | 11    | 543        |
| 02:45 PM    | 9                       | 232  | 16    | 46                   | 3    | 6     | 16                      | 158  | 64    | 6                        | 8    | 15    | 579        |
| Total       | 32                      | 818  | 48    | 198                  | 15   | 43    | 41                      | 599  | 171   | 34                       | 21   | 47    | 2067       |
| 03:00 PM    | 7                       | 228  | 10    | 74                   | 4    | 13    | 4                       | 116  | 32    | 12                       | 8    | 19    | 527        |
| 03:15 PM    | 12                      | 276  | 11    | 59                   | 8    | 13    | 5                       | 121  | 29    | 8                        | 6    | 10    | 558        |
| 03:30 PM    | 7                       | 316  | 12    | 69                   | 4    | 11    | 4                       | 121  | 17    | 10                       | 5    | 7     | 583        |
| 03:45 PM    | 7                       | 273  | 8     | 46                   | 7    | 11    | 8                       | 111  | 28    | 5                        | 6    | 10    | 520        |
| Total       | 33                      | 1093 | 41    | 248                  | 23   | 48    | 21                      | 469  | 106   | 35                       | 25   | 46    | 2188       |
| 04:00 PM    | 18                      | 324  | 6     | 59                   | 5    | 9     | 5                       | 119  | 29    | 8                        | 3    | 14    | 599        |
| 04:15 PM    | 9                       | 311  | 7     | 53                   | 5    | 10    | 6                       | 106  | 19    | 6                        | 2    | 14    | 548        |
| 04:30 PM    | 14                      | 324  | 4     | 58                   | 0    | 10    | 3                       | 120  | 21    | 9                        | 2    | 14    | 579        |
| 04:45 PM    | 6                       | 331  | 8     | 44                   | 3    | 8     | 2                       | 135  | 27    | 6                        | 6    | 12    | 588        |
| Total       | 47                      | 1290 | 25    | 214                  | 13   | 37    | 16                      | 480  | 96    | 29                       | 13   | 54    | 2314       |
| 05:00 PM    | 14                      | 329  | 10    | 51                   | 4    | 7     | 4                       | 129  | 24    | 11                       | 5    | 12    | 600        |
| 05:15 PM    | 8                       | 345  | 7     | 34                   | 1    | 13    | 2                       | 147  | 19    | 5                        | 5    | 6     | 592        |
| 05:30 PM    | 7                       | 260  | 3     | 34                   | 1    | 5     | 3                       | 90   | 23    | 4                        | 0    | 2     | 432        |
| 05:45 PM    | 12                      | 201  | 1     | 23                   | 1    | 7     | 0                       | 102  | 18    | 5                        | 0    | 2     | 372        |
| Total       | 41                      | 1135 | 21    | 142                  | 7    | 32    | 9                       | 468  | 84    | 25                       | 10   | 22    | 1996       |
| Grand Total | 153                     | 4336 | 135   | 802                  | 58   | 160   | 87                      | 2016 | 457   | 123                      | 69   | 169   | 8565       |
| Apprch %    | 3.3                     | 93.8 | 2.9   | 78.6                 | 5.7  | 15.7  | 3.4                     | 78.8 | 17.9  | 34.1                     | 19.1 | 46.8  |            |
| Total %     | 1.8                     | 50.6 | 1.6   | 9.4                  | 0.7  | 1.9   | 1                       | 23.5 | 5.3   | 1.4                      | 0.8  | 2     |            |
| Cars        | 145                     | 4316 | 134   | 789                  | 58   | 148   | 87                      | 2001 | 437   | 122                      | 69   | 169   | 8475       |
| % Cars      | 94.8                    | 99.5 | 99.3  | 98.4                 | 100  | 92.5  | 100                     | 99.3 | 95.6  | 99.2                     | 100  | 100   | 98.9       |
| Trucks      | 8                       | 20   | 1     | 13                   | 0    | 12    | 0                       | 15   | 20    | 1                        | 0    | 0     | 90         |
| % Trucks    | 5.2                     | 0.5  | 0.7   | 1.6                  | 0    | 7.5   | 0                       | 0.7  | 4.4   | 0.8                      | 0    | 0     | 1.1        |

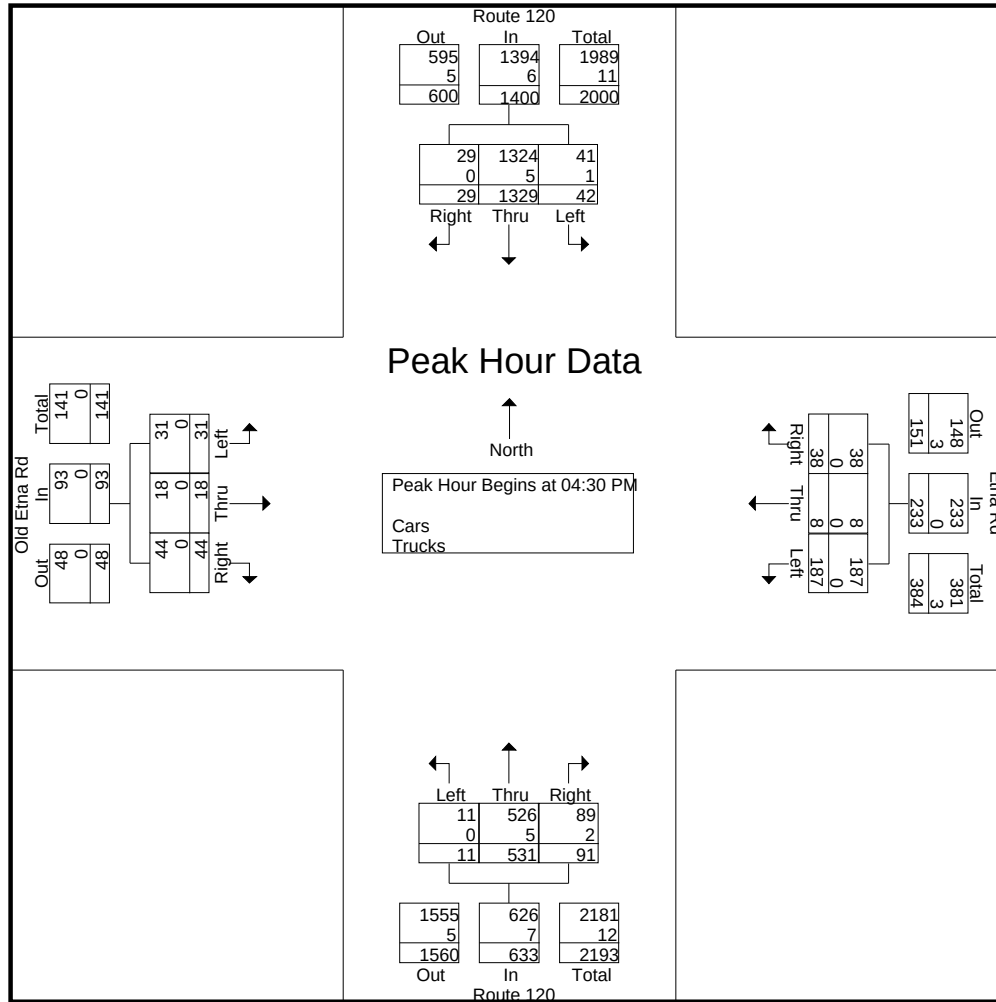
|                                                            | Route 120<br>From North |      |       |            | Etna Rd<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|----------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                 | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 04:30 PM                                                   | 14                      | 324  | 4     | 342        | 58                   | 0    | 10    | 68         | 3                       | 120  | 21    | 144        | 9                        | 2    | 14    | 25         | 579        |
| 04:45 PM                                                   | 6                       | 331  | 8     | 345        | 44                   | 3    | 8     | 55         | 2                       | 135  | 27    | 164        | 6                        | 6    | 12    | 24         | 588        |
| 05:00 PM                                                   | 14                      | 329  | 10    | 353        | 51                   | 4    | 7     | 62         | 4                       | 129  | 24    | 157        | 11                       | 5    | 12    | 28         | 600        |
| 05:15 PM                                                   | 8                       | 345  | 7     | 360        | 34                   | 1    | 13    | 48         | 2                       | 147  | 19    | 168        | 5                        | 5    | 6     | 16         | 592        |
| Total Volume                                               | 42                      | 1329 | 29    | 1400       | 187                  | 8    | 38    | 233        | 11                      | 531  | 91    | 633        | 31                       | 18   | 44    | 93         | 2359       |
| % App. Total                                               | 3                       | 94.9 | 2.1   |            | 80.3                 | 3.4  | 16.3  |            | 1.7                     | 83.9 | 14.4  |            | 33.3                     | 19.4 | 47.3  |            |            |
| PHF                                                        | .750                    | .963 | .725  | .972       | .806                 | .500 | .731  | .857       | .688                    | .903 | .843  | .942       | .705                     | .750 | .786  | .830       | .983       |
| Cars                                                       | 41                      | 1324 | 29    | 1394       | 187                  | 8    | 38    | 233        | 11                      | 526  | 89    | 626        | 31                       | 18   | 44    | 93         | 2346       |
| % Cars                                                     | 97.6                    | 99.6 | 100   | 99.6       | 100                  | 100  | 100   | 100        | 100                     | 99.1 | 97.8  | 98.9       | 100                      | 100  | 100   | 100        | 99.4       |
| Trucks                                                     | 1                       | 5    | 0     | 6          | 0                    | 0    | 0     | 0          | 0                       | 5    | 2     | 7          | 0                        | 0    | 0     | 0          | 13         |
| % Trucks                                                   | 2.4                     | 0.4  | 0     | 0.4        | 0                    | 0    | 0     | 0          | 0                       | 0.9  | 2.2   | 1.1        | 0                        | 0    | 0     | 0          | 0.6        |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 2

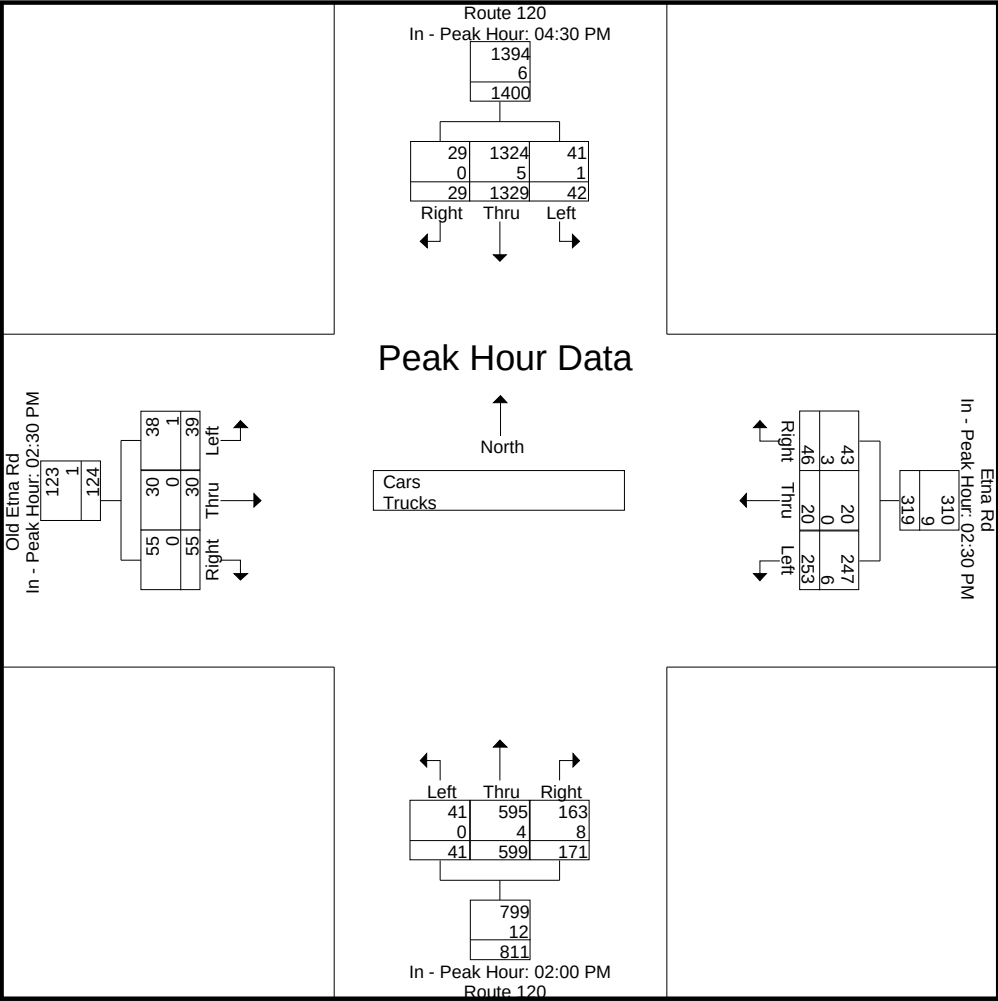


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      |      | 02:30 PM |      |      |      | 02:00 PM |      |      |      | 02:30 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 14       | 324  | 4    | 342  | 74       | 5    | 14   | 93   | 3        | 152  | 35   | 190  | 13       | 8    | 11   | 32   |
| +15 mins.    | 6        | 331  | 8    | 345  | 46       | 3    | 6    | 55   | 10       | 146  | 28   | 184  | 6        | 8    | 15   | 29   |
| +30 mins.    | 14       | 329  | 10   | 353  | 74       | 4    | 13   | 91   | 12       | 143  | 44   | 199  | 12       | 8    | 19   | 39   |
| +45 mins.    | 8        | 345  | 7    | 360  | 59       | 8    | 13   | 80   | 16       | 158  | 64   | 238  | 8        | 6    | 10   | 24   |
| Total Volume | 42       | 1329 | 29   | 1400 | 253      | 20   | 46   | 319  | 41       | 599  | 171  | 811  | 39       | 30   | 55   | 124  |
| % App. Total | 3        | 94.9 | 2.1  |      | 79.3     | 6.3  | 14.4 |      | 5.1      | 73.9 | 21.1 |      | 31.5     | 24.2 | 44.4 |      |
| PHF          | .750     | .963 | .725 | .972 | .855     | .625 | .821 | .858 | .641     | .948 | .668 | .852 | .750     | .938 | .724 | .795 |
| Cars         | 41       | 1324 | 29   | 1394 | 247      | 20   | 43   | 310  | 41       | 595  | 163  | 799  | 38       | 30   | 55   | 123  |
| % Cars       | 97.6     | 99.6 | 100  | 99.6 | 97.6     | 100  | 93.5 | 97.2 | 100      | 99.3 | 95.3 | 98.5 | 97.4     | 100  | 100  | 99.2 |
| Trucks       | 1        | 5    | 0    | 6    | 6        | 0    | 3    | 9    | 0        | 4    | 8    | 12   | 1        | 0    | 0    | 1    |
| % Trucks     | 2.4      | 0.4  | 0    | 0.4  | 2.4      | 0    | 6.5  | 2.8  | 0        | 0.7  | 4.7  | 1.5  | 2.6      | 0    | 0    | 0.8  |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 02:00 PM    | 6                       | 187  | 10    | 39                   | 2    | 8     | 3                       | 152  | 32    | 4                        | 2    | 13    | 458        |
| 02:15 PM    | 6                       | 189  | 13    | 39                   | 5    | 10    | 10                      | 143  | 26    | 11                       | 3    | 8     | 463        |
| 02:30 PM    | 7                       | 202  | 9     | 72                   | 5    | 12    | 12                      | 142  | 42    | 13                       | 8    | 11    | 535        |
| 02:45 PM    | 9                       | 228  | 16    | 43                   | 3    | 6     | 16                      | 158  | 63    | 5                        | 8    | 15    | 570        |
| Total       | 28                      | 806  | 48    | 193                  | 15   | 36    | 41                      | 595  | 163   | 33                       | 21   | 47    | 2026       |
| 03:00 PM    | 6                       | 228  | 10    | 73                   | 4    | 13    | 4                       | 115  | 31    | 12                       | 8    | 19    | 523        |
| 03:15 PM    | 11                      | 276  | 11    | 59                   | 8    | 12    | 5                       | 121  | 26    | 8                        | 6    | 10    | 553        |
| 03:30 PM    | 7                       | 315  | 12    | 67                   | 4    | 10    | 4                       | 119  | 15    | 10                       | 5    | 7     | 575        |
| 03:45 PM    | 7                       | 272  | 7     | 45                   | 7    | 11    | 8                       | 110  | 27    | 5                        | 6    | 10    | 515        |
| Total       | 31                      | 1091 | 40    | 244                  | 23   | 46    | 21                      | 465  | 99    | 35                       | 25   | 46    | 2166       |
| 04:00 PM    | 17                      | 324  | 6     | 56                   | 5    | 6     | 5                       | 118  | 28    | 8                        | 3    | 14    | 590        |
| 04:15 PM    | 9                       | 310  | 7     | 53                   | 5    | 10    | 6                       | 106  | 19    | 6                        | 2    | 14    | 547        |
| 04:30 PM    | 14                      | 323  | 4     | 58                   | 0    | 10    | 3                       | 118  | 21    | 9                        | 2    | 14    | 576        |
| 04:45 PM    | 5                       | 330  | 8     | 44                   | 3    | 8     | 2                       | 134  | 26    | 6                        | 6    | 12    | 584        |
| Total       | 45                      | 1287 | 25    | 211                  | 13   | 34    | 16                      | 476  | 94    | 29                       | 13   | 54    | 2297       |
| 05:00 PM    | 14                      | 329  | 10    | 51                   | 4    | 7     | 4                       | 128  | 24    | 11                       | 5    | 12    | 599        |
| 05:15 PM    | 8                       | 342  | 7     | 34                   | 1    | 13    | 2                       | 146  | 18    | 5                        | 5    | 6     | 587        |
| 05:30 PM    | 7                       | 260  | 3     | 33                   | 1    | 5     | 3                       | 90   | 22    | 4                        | 0    | 2     | 430        |
| 05:45 PM    | 12                      | 201  | 1     | 23                   | 1    | 7     | 0                       | 101  | 17    | 5                        | 0    | 2     | 370        |
| Total       | 41                      | 1132 | 21    | 141                  | 7    | 32    | 9                       | 465  | 81    | 25                       | 10   | 22    | 1986       |
| Grand Total | 145                     | 4316 | 134   | 789                  | 58   | 148   | 87                      | 2001 | 437   | 122                      | 69   | 169   | 8475       |
| Apprch %    | 3.2                     | 93.9 | 2.9   | 79.3                 | 5.8  | 14.9  | 3.4                     | 79.2 | 17.3  | 33.9                     | 19.2 | 46.9  |            |
| Total %     | 1.7                     | 50.9 | 1.6   | 9.3                  | 0.7  | 1.7   | 1                       | 23.6 | 5.2   | 1.4                      | 0.8  | 2     |            |

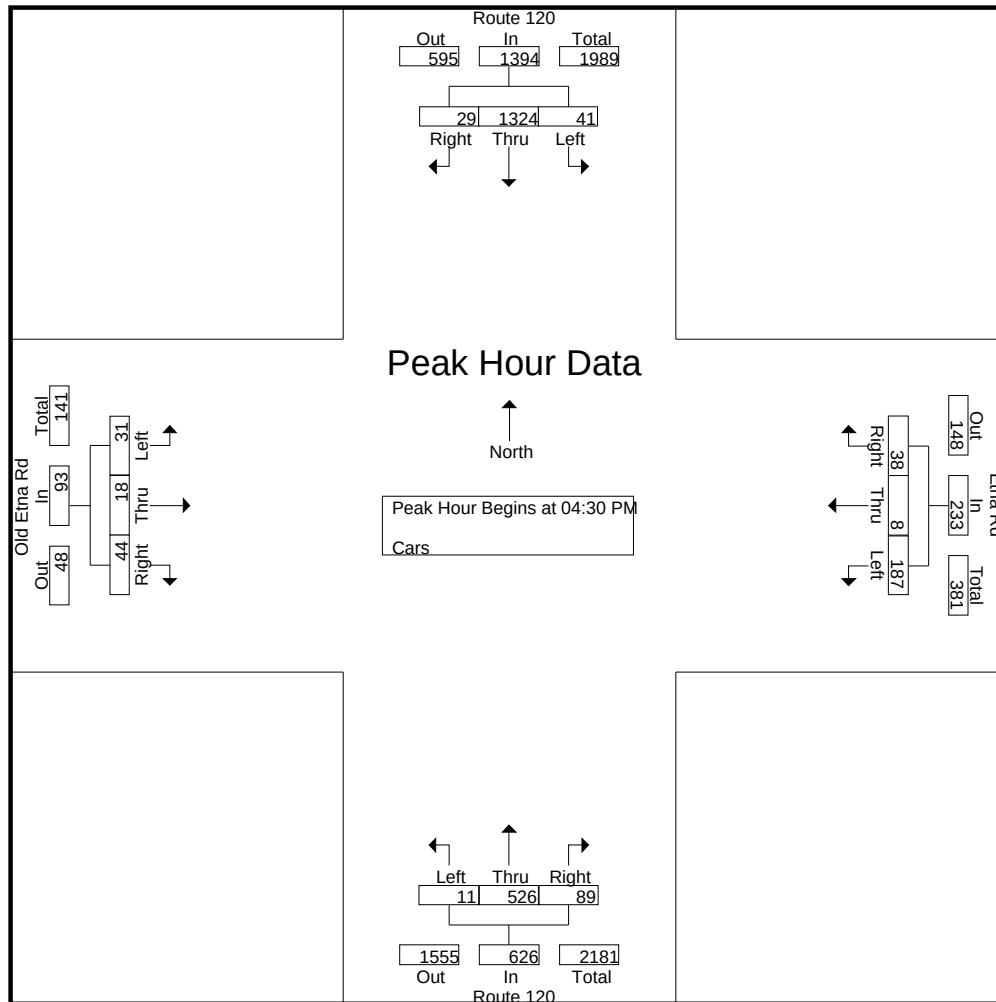
|                                                            | Route 120<br>From North |            |           |            | Etna Rd<br>From East |          |           |            | Route 120<br>From South |            |           |            | Old Etna Rd<br>From West |          |           |            | Int. Total |
|------------------------------------------------------------|-------------------------|------------|-----------|------------|----------------------|----------|-----------|------------|-------------------------|------------|-----------|------------|--------------------------|----------|-----------|------------|------------|
| Start Time                                                 | Left                    | Thru       | Right     | App. Total | Left                 | Thru     | Right     | App. Total | Left                    | Thru       | Right     | App. Total | Left                     | Thru     | Right     | App. Total |            |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |          |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |            |           |            |                      |          |           |            |                         |            |           |            |                          |          |           |            |            |
| 04:30 PM                                                   | <b>14</b>               | 323        | 4         | 341        | <b>58</b>            | 0        | 10        | <b>68</b>  | 3                       | 118        | 21        | 142        | 9                        | 2        | <b>14</b> | 25         | 576        |
| 04:45 PM                                                   | 5                       | 330        | 8         | 343        | 44                   | 3        | 8         | 55         | 2                       | 134        | <b>26</b> | 162        | 6                        | <b>6</b> | 12        | 24         | 584        |
| 05:00 PM                                                   | 14                      | 329        | <b>10</b> | 353        | 51                   | <b>4</b> | 7         | 62         | <b>4</b>                | 128        | 24        | 156        | <b>11</b>                | 5        | 12        | <b>28</b>  | <b>599</b> |
| 05:15 PM                                                   | 8                       | <b>342</b> | 7         | <b>357</b> | 34                   | 1        | <b>13</b> | 48         | 2                       | <b>146</b> | 18        | <b>166</b> | 5                        | 5        | 6         | 16         | 587        |
| Total Volume                                               | 41                      | 1324       | 29        | 1394       | 187                  | 8        | 38        | 233        | 11                      | 526        | 89        | 626        | 31                       | 18       | 44        | 93         | 2346       |
| % App. Total                                               | 2.9                     | 95         | 2.1       |            | 80.3                 | 3.4      | 16.3      |            | 1.8                     | 84         | 14.2      |            | 33.3                     | 19.4     | 47.3      |            |            |
| PHF                                                        | .732                    | .968       | .725      | .976       | .806                 | .500     | .731      | .857       | .688                    | .901       | .856      | .943       | .705                     | .750     | .786      | .830       | .979       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 5

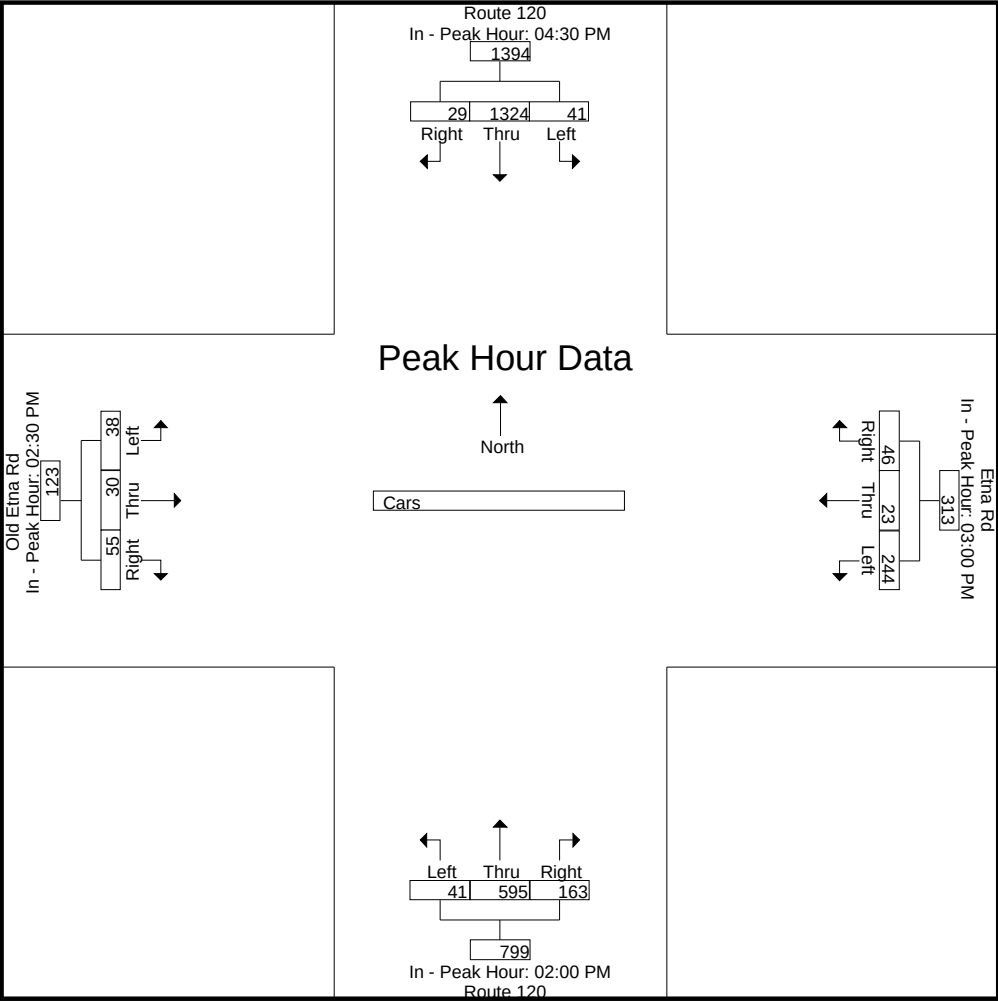


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:30 PM  |            |           |            | 03:00 PM  |          |           |           | 02:00 PM  |            |           |            | 02:30 PM  |          |           |           |
|--------------|-----------|------------|-----------|------------|-----------|----------|-----------|-----------|-----------|------------|-----------|------------|-----------|----------|-----------|-----------|
| +0 mins.     | <b>14</b> | 323        | 4         | 341        | <b>73</b> | 4        | <b>13</b> | <b>90</b> | 3         | 152        | 32        | 187        | <b>13</b> | <b>8</b> | 11        | 32        |
| +15 mins.    | 5         | 330        | 8         | 343        | 59        | <b>8</b> | 12        | 79        | 10        | 143        | 26        | 179        | 5         | 8        | 15        | 28        |
| +30 mins.    | 14        | 329        | <b>10</b> | 353        | 67        | 4        | 10        | 81        | 12        | 142        | 42        | 196        | 12        | 8        | <b>19</b> | <b>39</b> |
| +45 mins.    | 8         | <b>342</b> | 7         | <b>357</b> | 45        | 7        | 11        | 63        | <b>16</b> | <b>158</b> | <b>63</b> | <b>237</b> | 8         | 6        | 10        | 24        |
| Total Volume | 41        | 1324       | 29        | 1394       | 244       | 23       | 46        | 313       | 41        | 595        | 163       | 799        | 38        | 30       | 55        | 123       |
| % App. Total | 2.9       | 95         | 2.1       |            | 78        | 7.3      | 14.7      |           | 5.1       | 74.5       | 20.4      |            | 30.9      | 24.4     | 44.7      |           |
| PHF          | .732      | .968       | .725      | .976       | .836      | .719     | .885      | .869      | .641      | .941       | .647      | .843       | .731      | .938     | .724      | .788      |

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933005  
 Site Code : 52933005  
 Start Date : 11/10/2022  
 Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 7

## Groups Printed- Trucks

|             | Route 120<br>From North |      |       | Etna Rd<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Rd<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|----------------------|------|-------|-------------------------|------|-------|--------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                 | Thru | Right | Left                    | Thru | Right | Left                     | Thru | Right |            |
| 02:00 PM    | 4                       | 5    | 0     | 0                    | 0    | 2     | 0                       | 0    | 3     | 0                        | 0    | 0     | 14         |
| 02:15 PM    | 0                       | 2    | 0     | 0                    | 0    | 3     | 0                       | 3    | 2     | 0                        | 0    | 0     | 10         |
| 02:30 PM    | 0                       | 1    | 0     | 2                    | 0    | 2     | 0                       | 1    | 2     | 0                        | 0    | 0     | 8          |
| 02:45 PM    | 0                       | 4    | 0     | 3                    | 0    | 0     | 0                       | 0    | 1     | 1                        | 0    | 0     | 9          |
| Total       | 4                       | 12   | 0     | 5                    | 0    | 7     | 0                       | 4    | 8     | 1                        | 0    | 0     | 41         |
| 03:00 PM    | 1                       | 0    | 0     | 1                    | 0    | 0     | 0                       | 1    | 1     | 0                        | 0    | 0     | 4          |
| 03:15 PM    | 1                       | 0    | 0     | 0                    | 0    | 1     | 0                       | 0    | 3     | 0                        | 0    | 0     | 5          |
| 03:30 PM    | 0                       | 1    | 0     | 2                    | 0    | 1     | 0                       | 2    | 2     | 0                        | 0    | 0     | 8          |
| 03:45 PM    | 0                       | 1    | 1     | 1                    | 0    | 0     | 0                       | 1    | 1     | 0                        | 0    | 0     | 5          |
| Total       | 2                       | 2    | 1     | 4                    | 0    | 2     | 0                       | 4    | 7     | 0                        | 0    | 0     | 22         |
| 04:00 PM    | 1                       | 0    | 0     | 3                    | 0    | 3     | 0                       | 1    | 1     | 0                        | 0    | 0     | 9          |
| 04:15 PM    | 0                       | 1    | 0     | 0                    | 0    | 0     | 0                       | 0    | 0     | 0                        | 0    | 0     | 1          |
| 04:30 PM    | 0                       | 1    | 0     | 0                    | 0    | 0     | 0                       | 2    | 0     | 0                        | 0    | 0     | 3          |
| 04:45 PM    | 1                       | 1    | 0     | 0                    | 0    | 0     | 0                       | 1    | 1     | 0                        | 0    | 0     | 4          |
| Total       | 2                       | 3    | 0     | 3                    | 0    | 3     | 0                       | 4    | 2     | 0                        | 0    | 0     | 17         |
| 05:00 PM    | 0                       | 0    | 0     | 0                    | 0    | 0     | 0                       | 1    | 0     | 0                        | 0    | 0     | 1          |
| 05:15 PM    | 0                       | 3    | 0     | 0                    | 0    | 0     | 0                       | 1    | 1     | 0                        | 0    | 0     | 5          |
| 05:30 PM    | 0                       | 0    | 0     | 1                    | 0    | 0     | 0                       | 0    | 1     | 0                        | 0    | 0     | 2          |
| 05:45 PM    | 0                       | 0    | 0     | 0                    | 0    | 0     | 0                       | 1    | 1     | 0                        | 0    | 0     | 2          |
| Total       | 0                       | 3    | 0     | 1                    | 0    | 0     | 0                       | 3    | 3     | 0                        | 0    | 0     | 10         |
| Grand Total | 8                       | 20   | 1     | 13                   | 0    | 12    | 0                       | 15   | 20    | 1                        | 0    | 0     | 90         |
| Apprch %    | 27.6                    | 69   | 3.4   | 52                   | 0    | 48    | 0                       | 42.9 | 57.1  | 100                      | 0    | 0     |            |
| Total %     | 8.9                     | 22.2 | 1.1   | 14.4                 | 0    | 13.3  | 0                       | 16.7 | 22.2  | 1.1                      | 0    | 0     |            |

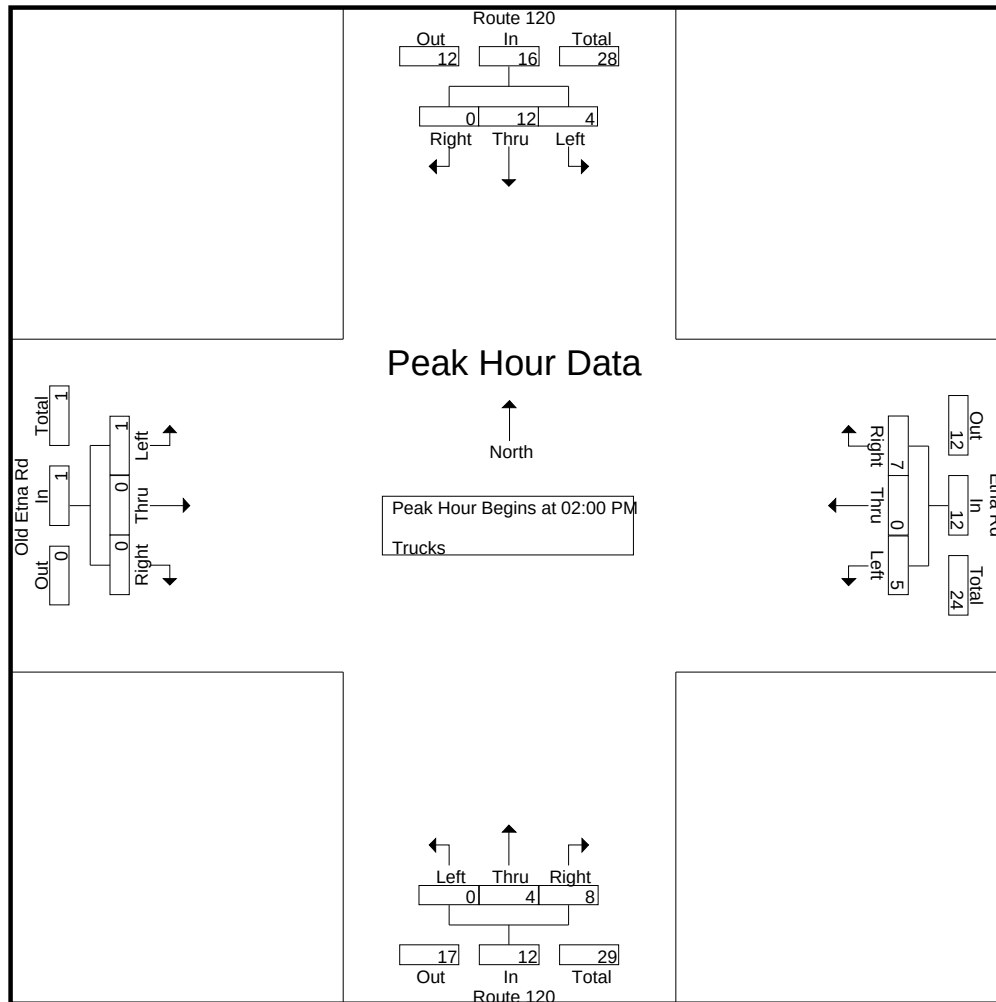
|                                                            | Route 120<br>From North |      |       |            | Etna Rd<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|----------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                 | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |            |
| 02:00 PM                                                   | 4                       | 5    | 0     | 9          | 0                    | 0    | 2     | 2          | 0                       | 0    | 3     | 3          | 0                        | 0    | 0     | 0          | 14         |
| 02:15 PM                                                   | 0                       | 2    | 0     | 2          | 0                    | 0    | 3     | 3          | 0                       | 3    | 2     | 5          | 0                        | 0    | 0     | 0          | 10         |
| 02:30 PM                                                   | 0                       | 1    | 0     | 1          | 2                    | 0    | 2     | 4          | 0                       | 1    | 2     | 3          | 0                        | 0    | 0     | 0          | 8          |
| 02:45 PM                                                   | 0                       | 4    | 0     | 4          | 3                    | 0    | 0     | 3          | 0                       | 0    | 1     | 1          | 1                        | 0    | 0     | 1          | 9          |
| Total Volume                                               | 4                       | 12   | 0     | 16         | 5                    | 0    | 7     | 12         | 0                       | 4    | 8     | 12         | 1                        | 0    | 0     | 1          | 41         |
| % App. Total                                               | 25                      | 75   | 0     |            | 41.7                 | 0    | 58.3  |            | 0                       | 33.3 | 66.7  |            | 100                      | 0    | 0     |            |            |
| PHF                                                        | .250                    | .600 | .000  | .444       | .417                 | .000 | .583  | .750       | .000                    | .333 | .667  | .600       | .250                     | .000 | .000  | .250       | .732       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 8

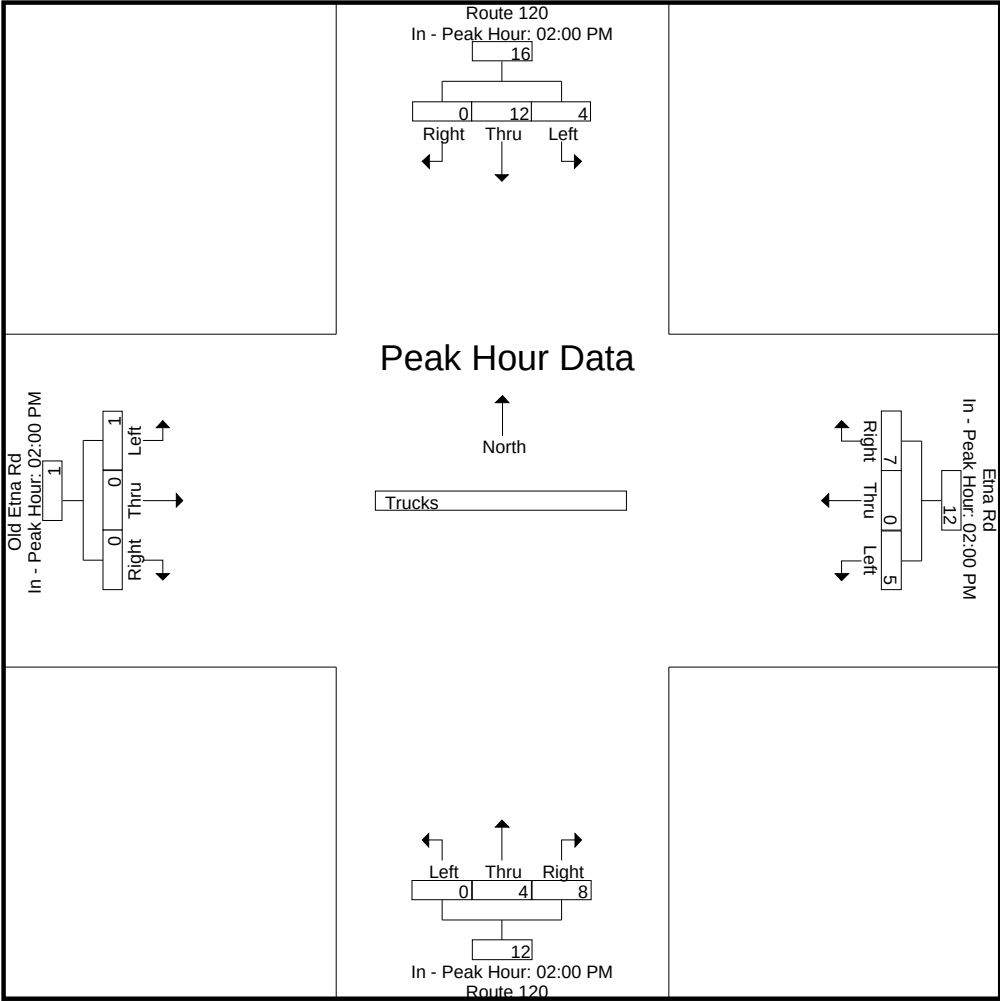


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      |      | 02:00 PM |      |      |      | 02:00 PM |      |      |      | 02:00 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 4        | 5    | 0    | 9    | 0        | 0    | 2    | 2    | 0        | 0    | 3    | 3    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 2    | 0    | 2    | 0        | 0    | 3    | 3    | 0        | 3    | 2    | 5    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 1    | 0    | 1    | 2        | 0    | 2    | 4    | 0        | 1    | 2    | 3    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 4    | 0    | 4    | 3        | 0    | 0    | 3    | 0        | 0    | 1    | 1    | 1        | 0    | 0    | 1    |
| Total Volume | 4        | 12   | 0    | 16   | 5        | 0    | 7    | 12   | 0        | 4    | 8    | 12   | 1        | 0    | 0    | 1    |
| % App. Total | 25       | 75   | 0    |      | 41.7     | 0    | 58.3 |      | 0        | 33.3 | 66.7 |      | 100      | 0    | 0    |      |
| PHF          | .250     | .600 | .000 | .444 | .417     | .000 | .583 | .750 | .000     | .333 | .667 | .600 | .250     | .000 | .000 | .250 |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 10

## Groups Printed- Bikes Peds

|             | Route 120<br>From North |      |       |      | Etna Rd<br>From East |      |       |      | Route 120<br>From South |      |       |      | Old Etna Rd<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|----------------------|------|-------|------|-------------------------|------|-------|------|--------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                 | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                     | Thru | Right | Peds |              |              |            |
| 02:00 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 02:15 PM    | 0                       | 0    | 0     | 0    | 0                    | 2    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 2            | 2          |
| 02:30 PM    | 0                       | 0    | 0     | 0    | 0                    | 2    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 2            | 2          |
| 02:45 PM    | 0                       | 0    | 0     | 0    | 0                    | 1    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 1            | 1          |
| Total       | 0                       | 0    | 0     | 0    | 0                    | 5    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 5            | 5          |
| 03:00 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 03:15 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 03:30 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 03:45 PM    | 0                       | 0    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 1     | 0    | 0                        | 0    | 0     | 0    | 1            | 1            | 2          |
| Total       | 0                       | 0    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 1     | 0    | 0                        | 0    | 0     | 0    | 1            | 1            | 2          |
| 04:00 PM    | 0                       | 0    | 0     | 0    | 1                    | 2    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 3            | 3          |
| 04:15 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 1                       | 1    | 0     | 0    | 1                        | 0    | 0     | 0    | 0            | 3            | 3          |
| 04:30 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 04:45 PM    | 0                       | 0    | 0     | 1    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 1            | 0            | 1          |
| Total       | 0                       | 0    | 0     | 1    | 1                    | 2    | 0     | 0    | 1                       | 1    | 0     | 0    | 1                        | 0    | 0     | 0    | 1            | 6            | 7          |
| 05:00 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 05:15 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 05:30 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| 05:45 PM    | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0    | 0     | 0    | 0                    | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                        | 0    | 0     | 0    | 0            | 0            | 0          |
| Grand Total | 0                       | 0    | 0     | 2    | 1                    | 7    | 0     | 0    | 1                       | 1    | 1     | 0    | 1                        | 0    | 0     | 0    | 2            | 12           | 14         |
| Apprch %    | 0                       | 0    | 0     |      | 12.5                 | 87.5 | 0     |      | 33.3                    | 33.3 | 33.3  |      | 100                      | 0    | 0     |      |              |              |            |
| Total %     | 0                       | 0    | 0     |      | 8.3                  | 58.3 | 0     |      | 8.3                     | 8.3  | 8.3   |      | 8.3                      | 0    | 0     |      | 14.3         | 85.7         |            |

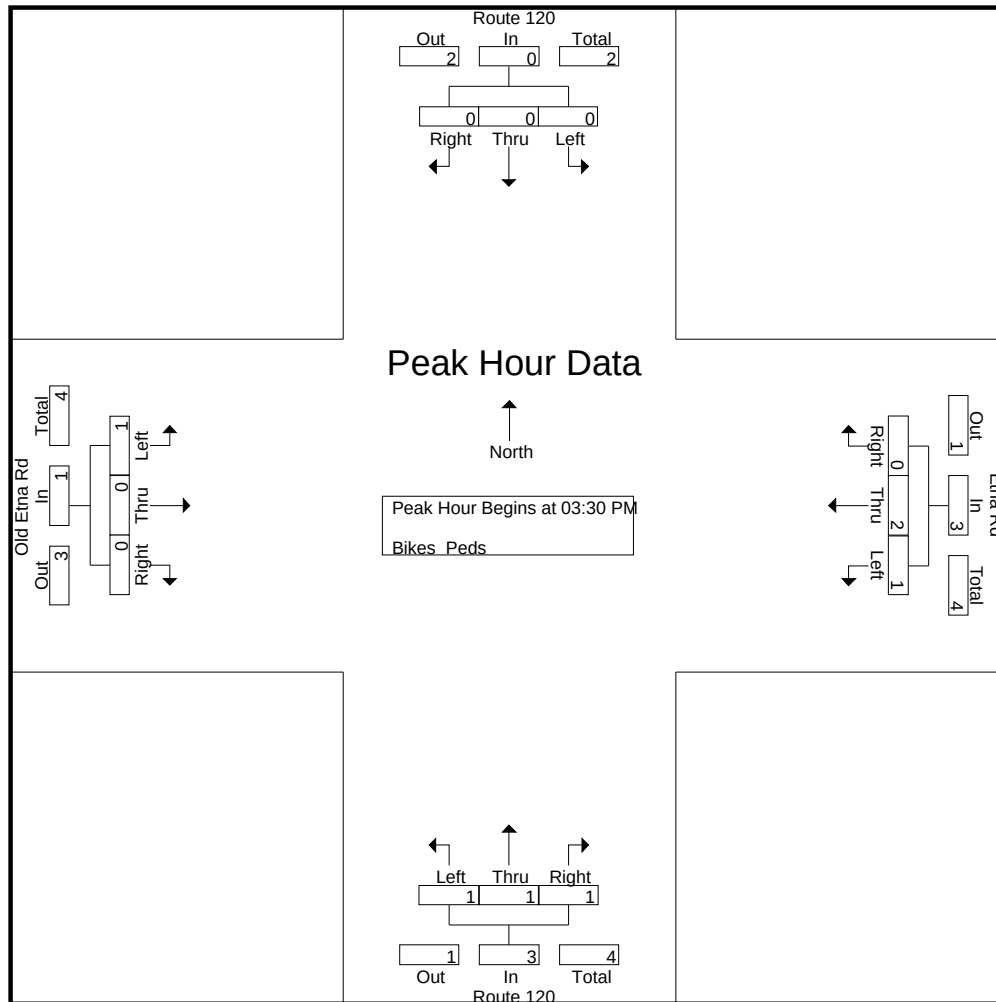
|                                                            | Route 120<br>From North |      |       |            | Etna Rd<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Rd<br>From West |      |       |            |   |   |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|----------------------|------|-------|------------|-------------------------|------|-------|------------|--------------------------|------|-------|------------|---|---|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                 | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                     | Thru | Right | App. Total |   |   | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |   |   |            |
| Peak Hour for Entire Intersection Begins at 03:30 PM       |                         |      |       |            |                      |      |       |            |                         |      |       |            |                          |      |       |            |   |   |            |
| 03:30 PM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0 | 0 | 0          |
| 03:45 PM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 0                       | 0    | 1     | 1          | 0                        | 0    | 0     | 0          | 0 | 0 | 1          |
| 04:00 PM                                                   | 0                       | 0    | 0     | 0          | 1                    | 2    | 0     | 3          | 0                       | 0    | 0     | 0          | 0                        | 0    | 0     | 0          | 0 | 0 | 3          |
| 04:15 PM                                                   | 0                       | 0    | 0     | 0          | 0                    | 0    | 0     | 0          | 1                       | 1    | 0     | 2          | 1                        | 0    | 0     | 0          | 1 | 0 | 3          |
| Total Volume                                               | 0                       | 0    | 0     | 0          | 1                    | 2    | 0     | 3          | 1                       | 1    | 1     | 3          | 1                        | 0    | 0     | 1          |   |   | 7          |
| % App. Total                                               | 0                       | 0    | 0     |            | 33.3                 | 66.7 | 0     |            | 33.3                    | 33.3 | 33.3  |            | 100                      | 0    | 0     |            |   |   |            |
| PHF                                                        | .000                    | .000 | .000  | .000       | .250                 | .250 | .000  | .250       | .250                    | .250 | .250  | .375       | .250                     | .000 | .000  | .250       |   |   | .583       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 11

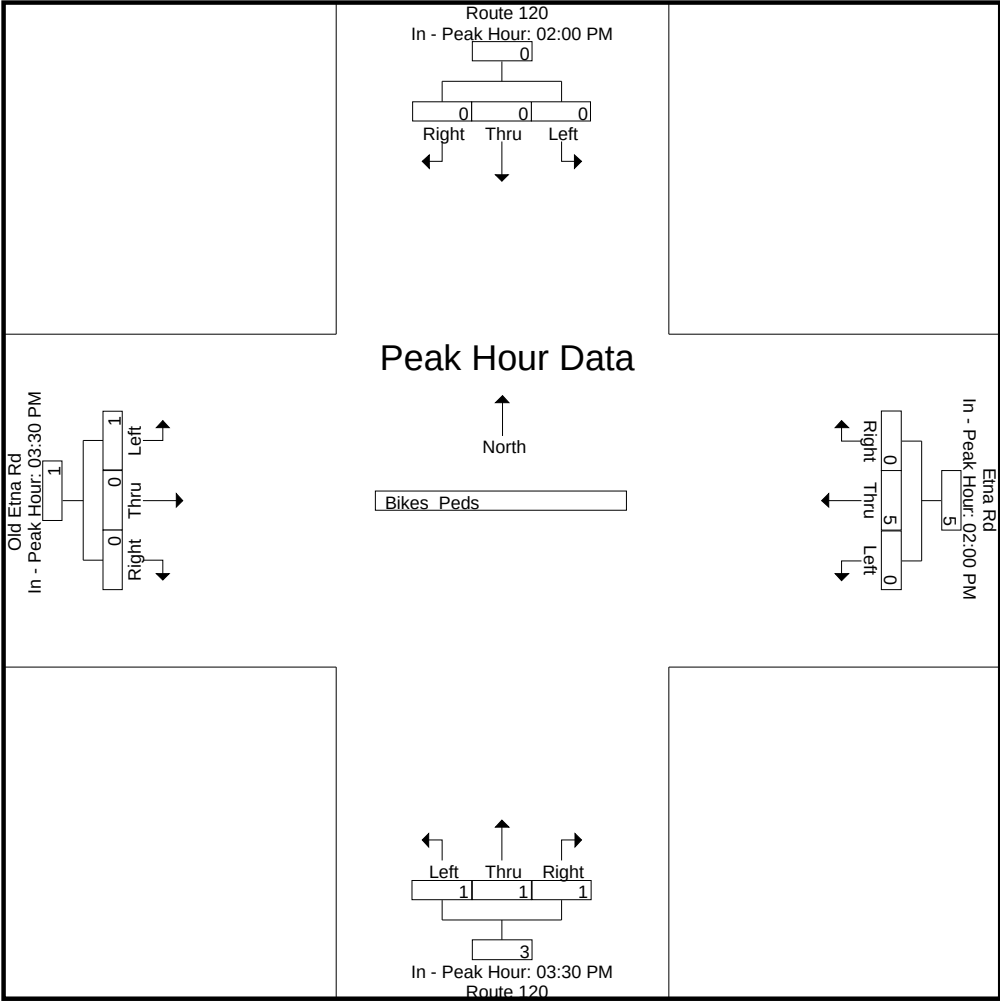


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      |      | 02:00 PM |      |      |      | 03:30 PM |      |      |      | 03:30 PM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    | 0        | 0    | 1    | 1    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0    | 0        | 1    | 0    | 1    | 1        | 1    | 0    | 2    | 1        | 0    | 0    | 1    |
| Total Volume | 0        | 0    | 0    | 0    | 0        | 5    | 0    | 5    | 1        | 1    | 1    | 3    | 1        | 0    | 0    | 1    |
| % App. Total | 0        | 0    | 0    | 0    | 0        | 100  | 0    |      | 33.3     | 33.3 | 33.3 |      | 100      | 0    | 0    |      |
| PHF          | .000     | .000 | .000 | .000 | .000     | .625 | .000 | .625 | .250     | .250 | .250 | .375 | .250     | .000 | .000 | .250 |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933005  
Site Code : 52933005  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Route 120<br>From North |      |       | Etna Road<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Road<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|------------------------|------|-------|-------------------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                   | Thru | Right | Left                    | Thru | Right | Left                       | Thru | Right |            |
| 11:00 AM    | 5                       | 91   | 0     | 24                     | 2    | 4     | 4                       | 86   | 15    | 3                          | 0    | 14    | 248        |
| 11:15 AM    | 1                       | 73   | 1     | 23                     | 0    | 4     | 2                       | 112  | 21    | 1                          | 0    | 4     | 242        |
| 11:30 AM    | 4                       | 98   | 3     | 15                     | 4    | 4     | 8                       | 106  | 22    | 3                          | 1    | 8     | 276        |
| 11:45 AM    | 3                       | 102  | 2     | 16                     | 0    | 4     | 4                       | 92   | 27    | 3                          | 0    | 1     | 254        |
| Total       | 13                      | 364  | 6     | 78                     | 6    | 16    | 18                      | 396  | 85    | 10                         | 1    | 27    | 1020       |
| 12:00 PM    | 5                       | 103  | 0     | 21                     | 0    | 2     | 3                       | 110  | 14    | 3                          | 1    | 5     | 267        |
| 12:15 PM    | 8                       | 96   | 1     | 16                     | 2    | 4     | 0                       | 101  | 19    | 2                          | 2    | 4     | 255        |
| 12:30 PM    | 5                       | 99   | 4     | 18                     | 1    | 9     | 2                       | 118  | 19    | 1                          | 1    | 2     | 279        |
| 12:45 PM    | 8                       | 102  | 3     | 20                     | 0    | 5     | 2                       | 95   | 15    | 5                          | 0    | 1     | 256        |
| Total       | 26                      | 400  | 8     | 75                     | 3    | 20    | 7                       | 424  | 67    | 11                         | 4    | 12    | 1057       |
| Grand Total | 39                      | 764  | 14    | 153                    | 9    | 36    | 25                      | 820  | 152   | 21                         | 5    | 39    | 2077       |
| Apprch %    | 4.8                     | 93.5 | 1.7   | 77.3                   | 4.5  | 18.2  | 2.5                     | 82.2 | 15.2  | 32.3                       | 7.7  | 60    |            |
| Total %     | 1.9                     | 36.8 | 0.7   | 7.4                    | 0.4  | 1.7   | 1.2                     | 39.5 | 7.3   | 1                          | 0.2  | 1.9   |            |
| Cars        | 37                      | 761  | 14    | 153                    | 9    | 30    | 25                      | 818  | 152   | 21                         | 5    | 39    | 2064       |
| % Cars      | 94.9                    | 99.6 | 100   | 100                    | 100  | 83.3  | 100                     | 99.8 | 100   | 100                        | 100  | 100   | 99.4       |
| Trucks      | 2                       | 3    | 0     | 0                      | 0    | 6     | 0                       | 2    | 0     | 0                          | 0    | 0     | 13         |
| % Trucks    | 5.1                     | 0.4  | 0     | 0                      | 0    | 16.7  | 0                       | 0.2  | 0     | 0                          | 0    | 0     | 0.6        |

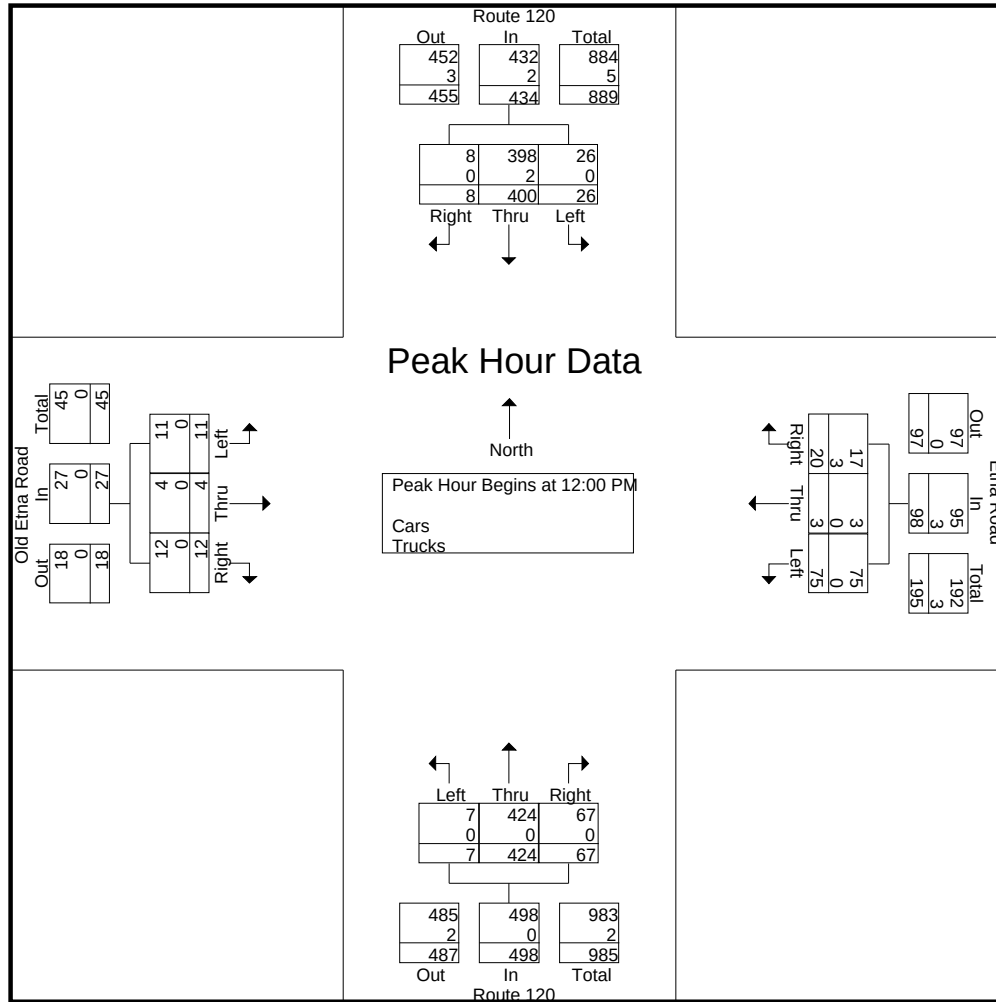
|                                                            | Route 120<br>From North |            |          |            | Etna Road<br>From East |          |          |            | Route 120<br>From South |            |           |            | Old Etna Road<br>From West |          |          |            |            |
|------------------------------------------------------------|-------------------------|------------|----------|------------|------------------------|----------|----------|------------|-------------------------|------------|-----------|------------|----------------------------|----------|----------|------------|------------|
| Start Time                                                 | Left                    | Thru       | Right    | App. Total | Left                   | Thru     | Right    | App. Total | Left                    | Thru       | Right     | App. Total | Left                       | Thru     | Right    | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |            |          |            |                        |          |          |            |                         |            |           |            |                            |          |          |            |            |
| Peak Hour for Entire Intersection Begins at 12:00 PM       |                         |            |          |            |                        |          |          |            |                         |            |           |            |                            |          |          |            |            |
| 12:00 PM                                                   | 5                       | <b>103</b> | 0        | 108        | <b>21</b>              | 0        | 2        | 23         | <b>3</b>                | 110        | 14        | 127        | 3                          | 1        | <b>5</b> | <b>9</b>   | 267        |
| 12:15 PM                                                   | <b>8</b>                | 96         | 1        | 105        | 16                     | <b>2</b> | 4        | 22         | 0                       | 101        | <b>19</b> | 120        | 2                          | <b>2</b> | 4        | 8          | 255        |
| 12:30 PM                                                   | 5                       | 99         | <b>4</b> | 108        | 18                     | 1        | <b>9</b> | <b>28</b>  | 2                       | <b>118</b> | 19        | <b>139</b> | 1                          | 1        | 2        | 4          | <b>279</b> |
| 12:45 PM                                                   | 8                       | 102        | 3        | <b>113</b> | 20                     | 0        | 5        | 25         | 2                       | 95         | 15        | 112        | <b>5</b>                   | 0        | 1        | 6          | 256        |
| Total Volume                                               | 26                      | 400        | 8        | 434        | 75                     | 3        | 20       | 98         | 7                       | 424        | 67        | 498        | 11                         | 4        | 12       | 27         | 1057       |
| % App. Total                                               | 6                       | 92.2       | 1.8      |            | 76.5                   | 3.1      | 20.4     |            | 1.4                     | 85.1       | 13.5      |            | 40.7                       | 14.8     | 44.4     |            |            |
| PHF                                                        | .813                    | .971       | .500     | .960       | .893                   | .375     | .556     | .875       | .583                    | .898       | .882      | .896       | .550                       | .500     | .600     | .750       | .947       |
| Cars                                                       | 26                      | 398        | 8        | 432        | 75                     | 3        | 17       | 95         | 7                       | 424        | 67        | 498        | 11                         | 4        | 12       | 27         | 1052       |
| % Cars                                                     | 100                     | 99.5       | 100      | 99.5       | 100                    | 100      | 85.0     | 96.9       | 100                     | 100        | 100       | 100        | 100                        | 100      | 100      | 100        | 99.5       |
| Trucks                                                     | 0                       | 2          | 0        | 2          | 0                      | 0        | 3        | 3          | 0                       | 0          | 0         | 0          | 0                          | 0        | 0        | 0          | 5          |
| % Trucks                                                   | 0                       | 0.5        | 0        | 0.5        | 0                      | 0        | 15.0     | 3.1        | 0                       | 0          | 0         | 0          | 0                          | 0        | 0        | 0          | 0.5        |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 2

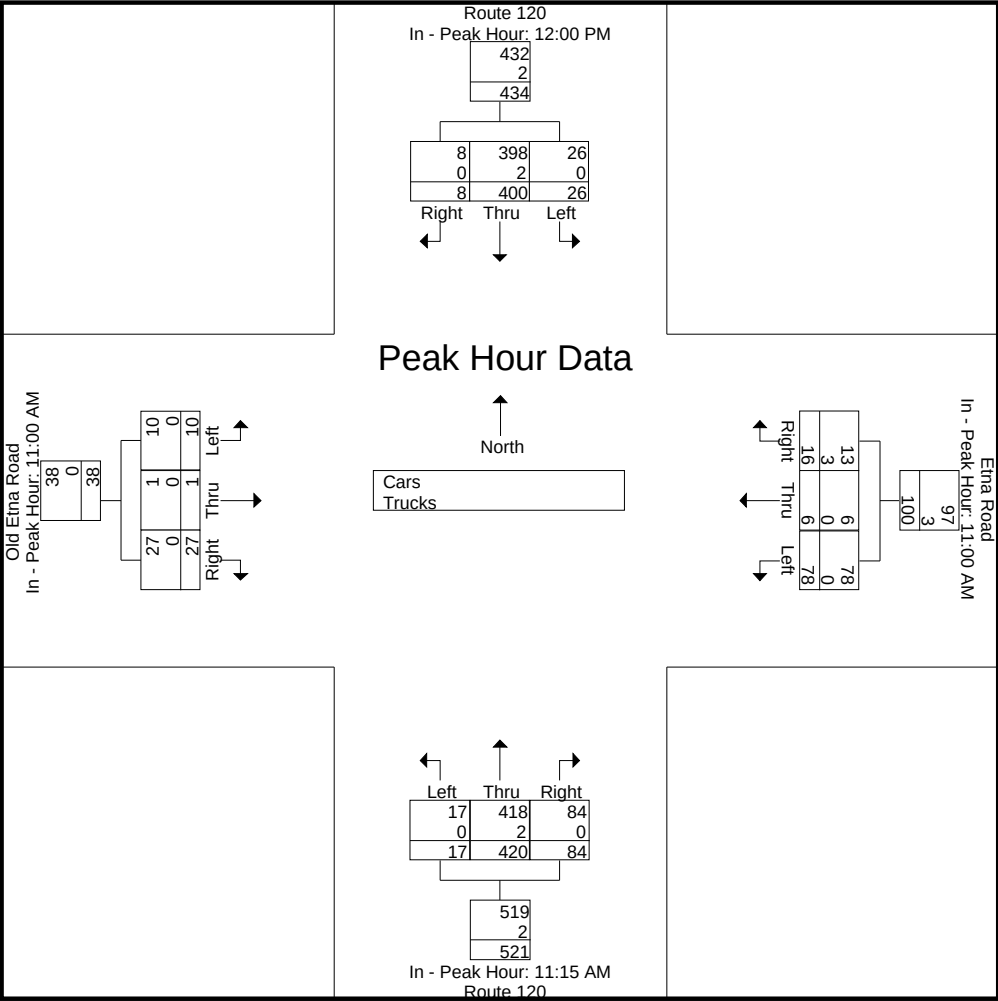


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 12:00 PM |            |          |            | 11:00 AM  |          |          |           | 11:15 AM |            |           |            | 11:00 AM |          |           |           |
|--------------|----------|------------|----------|------------|-----------|----------|----------|-----------|----------|------------|-----------|------------|----------|----------|-----------|-----------|
| +0 mins.     | 5        | <b>103</b> | 0        | 108        | <b>24</b> | 2        | <b>4</b> | <b>30</b> | 2        | <b>112</b> | 21        | 135        | <b>3</b> | 0        | <b>14</b> | <b>17</b> |
| +15 mins.    | <b>8</b> | 96         | 1        | 105        | 23        | 0        | 4        | 27        | <b>8</b> | 106        | 22        | <b>136</b> | 1        | 0        | 4         | 5         |
| +30 mins.    | 5        | 99         | <b>4</b> | 108        | 15        | <b>4</b> | 4        | 23        | 4        | 92         | <b>27</b> | 123        | 3        | <b>1</b> | 8         | 12        |
| +45 mins.    | 8        | 102        | 3        | <b>113</b> | 16        | 0        | 4        | 20        | 3        | 110        | 14        | 127        | 3        | 0        | 1         | 4         |
| Total Volume | 26       | 400        | 8        | 434        | 78        | 6        | 16       | 100       | 17       | 420        | 84        | 521        | 10       | 1        | 27        | 38        |
| % App. Total | 6        | 92.2       | 1.8      |            | 78        | 6        | 16       |           | 3.3      | 80.6       | 16.1      |            | 26.3     | 2.6      | 71.1      |           |
| PHF          | .813     | .971       | .500     | .960       | .813      | .375     | 1.000    | .833      | .531     | .938       | .778      | .958       | .833     | .250     | .482      | .559      |
| Cars         | 26       | 398        | 8        | 432        | 78        | 6        | 13       | 97        | 17       | 418        | 84        | 519        | 10       | 1        | 27        | 38        |
| % Cars       | 100      | 99.5       | 100      | 99.5       | 100       | 100      | 81.2     | 97        | 100      | 99.5       | 100       | 99.6       | 100      | 100      | 100       | 100       |
| Trucks       | 0        | 2          | 0        | 2          | 0         | 0        | 3        | 3         | 0        | 2          | 0         | 2          | 0        | 0        | 0         | 0         |
| % Trucks     | 0        | 0.5        | 0        | 0.5        | 0         | 0        | 18.8     | 3         | 0        | 0.5        | 0         | 0.4        | 0        | 0        | 0         | 0         |

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S5  
 Site Code : 52933005  
 Start Date : 11/12/2022  
 Page No : 3





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 4

## Groups Printed- Cars

|             | Route 120<br>From North |      |       | Etna Road<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Road<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|------------------------|------|-------|-------------------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                   | Thru | Right | Left                    | Thru | Right | Left                       | Thru | Right |            |
| 11:00 AM    | 5                       | 91   | 0     | 24                     | 2    | 3     | 4                       | 86   | 15    | 3                          | 0    | 14    | 247        |
| 11:15 AM    | 1                       | 73   | 1     | 23                     | 0    | 3     | 2                       | 112  | 21    | 1                          | 0    | 4     | 241        |
| 11:30 AM    | 3                       | 98   | 3     | 15                     | 4    | 3     | 8                       | 104  | 22    | 3                          | 1    | 8     | 272        |
| 11:45 AM    | 2                       | 101  | 2     | 16                     | 0    | 4     | 4                       | 92   | 27    | 3                          | 0    | 1     | 252        |
| Total       | 11                      | 363  | 6     | 78                     | 6    | 13    | 18                      | 394  | 85    | 10                         | 1    | 27    | 1012       |
| 12:00 PM    | 5                       | 103  | 0     | 21                     | 0    | 2     | 3                       | 110  | 14    | 3                          | 1    | 5     | 267        |
| 12:15 PM    | 8                       | 96   | 1     | 16                     | 2    | 3     | 0                       | 101  | 19    | 2                          | 2    | 4     | 254        |
| 12:30 PM    | 5                       | 98   | 4     | 18                     | 1    | 8     | 2                       | 118  | 19    | 1                          | 1    | 2     | 277        |
| 12:45 PM    | 8                       | 101  | 3     | 20                     | 0    | 4     | 2                       | 95   | 15    | 5                          | 0    | 1     | 254        |
| Total       | 26                      | 398  | 8     | 75                     | 3    | 17    | 7                       | 424  | 67    | 11                         | 4    | 12    | 1052       |
| Grand Total | 37                      | 761  | 14    | 153                    | 9    | 30    | 25                      | 818  | 152   | 21                         | 5    | 39    | 2064       |
| Apprch %    | 4.6                     | 93.7 | 1.7   | 79.7                   | 4.7  | 15.6  | 2.5                     | 82.2 | 15.3  | 32.3                       | 7.7  | 60    |            |
| Total %     | 1.8                     | 36.9 | 0.7   | 7.4                    | 0.4  | 1.5   | 1.2                     | 39.6 | 7.4   | 1                          | 0.2  | 1.9   |            |

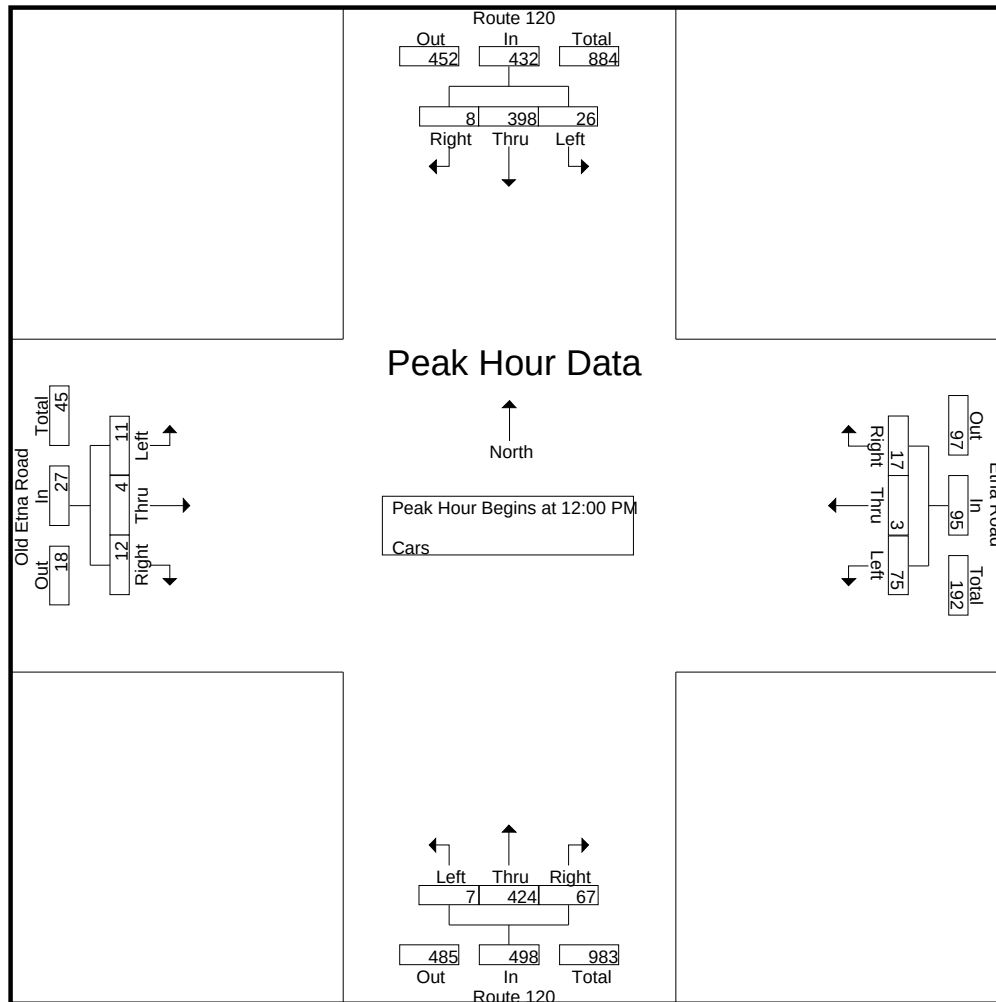
|                                                            | Route 120<br>From North |            |          |            | Etna Road<br>From East |          |          |            | Route 120<br>From South |            |           |            | Old Etna Road<br>From West |          |          |            | Int. Total |
|------------------------------------------------------------|-------------------------|------------|----------|------------|------------------------|----------|----------|------------|-------------------------|------------|-----------|------------|----------------------------|----------|----------|------------|------------|
| Start Time                                                 | Left                    | Thru       | Right    | App. Total | Left                   | Thru     | Right    | App. Total | Left                    | Thru       | Right     | App. Total | Left                       | Thru     | Right    | App. Total |            |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |            |          |            |                        |          |          |            |                         |            |           |            |                            |          |          |            |            |
| Peak Hour for Entire Intersection Begins at 12:00 PM       |                         |            |          |            |                        |          |          |            |                         |            |           |            |                            |          |          |            |            |
| 12:00 PM                                                   | 5                       | <b>103</b> | 0        | 108        | <b>21</b>              | 0        | 2        | 23         | <b>3</b>                | 110        | 14        | 127        | 3                          | 1        | <b>5</b> | <b>9</b>   | 267        |
| 12:15 PM                                                   | <b>8</b>                | 96         | 1        | 105        | 16                     | <b>2</b> | 3        | 21         | 0                       | 101        | <b>19</b> | 120        | 2                          | <b>2</b> | 4        | 8          | 254        |
| 12:30 PM                                                   | 5                       | 98         | <b>4</b> | 107        | 18                     | 1        | <b>8</b> | <b>27</b>  | 2                       | <b>118</b> | 19        | <b>139</b> | 1                          | 1        | 2        | 4          | <b>277</b> |
| 12:45 PM                                                   | 8                       | 101        | 3        | <b>112</b> | 20                     | 0        | 4        | 24         | 2                       | 95         | 15        | 112        | <b>5</b>                   | 0        | 1        | 6          | 254        |
| Total Volume                                               | 26                      | 398        | 8        | 432        | 75                     | 3        | 17       | 95         | 7                       | 424        | 67        | 498        | 11                         | 4        | 12       | 27         | 1052       |
| % App. Total                                               | 6                       | 92.1       | 1.9      |            | 78.9                   | 3.2      | 17.9     |            | 1.4                     | 85.1       | 13.5      |            | 40.7                       | 14.8     | 44.4     |            |            |
| PHF                                                        | .813                    | .966       | .500     | .964       | .893                   | .375     | .531     | .880       | .583                    | .898       | .882      | .896       | .550                       | .500     | .600     | .750       | .949       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S5  
 Site Code : 52933005  
 Start Date : 11/12/2022  
 Page No : 5

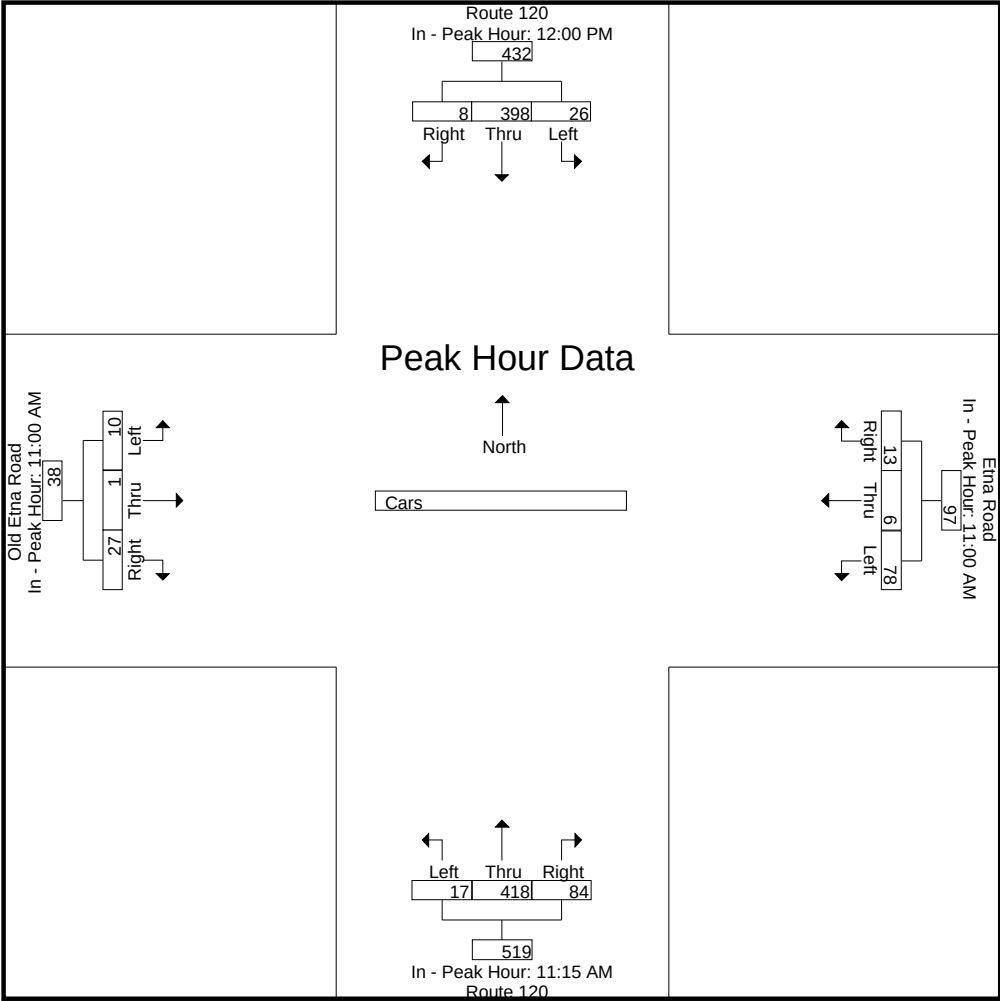


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 12:00 PM |            |          |            | 11:00 AM  |          |          |           | 11:15 AM |            |           |            | 11:00 AM |          |           |           |
|--------------|----------|------------|----------|------------|-----------|----------|----------|-----------|----------|------------|-----------|------------|----------|----------|-----------|-----------|
| +0 mins.     | 5        | <b>103</b> | 0        | 108        | <b>24</b> | 2        | 3        | <b>29</b> | 2        | <b>112</b> | 21        | <b>135</b> | <b>3</b> | 0        | <b>14</b> | <b>17</b> |
| +15 mins.    | <b>8</b> | 96         | 1        | 105        | 23        | 0        | 3        | 26        | <b>8</b> | 104        | 22        | 134        | 1        | 0        | 4         | 5         |
| +30 mins.    | 5        | 98         | <b>4</b> | 107        | 15        | <b>4</b> | 3        | 22        | 4        | 92         | <b>27</b> | 123        | 3        | <b>1</b> | 8         | 12        |
| +45 mins.    | 8        | 101        | 3        | <b>112</b> | 16        | 0        | <b>4</b> | 20        | 3        | 110        | 14        | 127        | 3        | 0        | 1         | 4         |
| Total Volume | 26       | 398        | 8        | 432        | 78        | 6        | 13       | 97        | 17       | 418        | 84        | 519        | 10       | 1        | 27        | 38        |
| % App. Total | 6        | 92.1       | 1.9      |            | 80.4      | 6.2      | 13.4     |           | 3.3      | 80.5       | 16.2      |            | 26.3     | 2.6      | 71.1      |           |
| PHF          | .813     | .966       | .500     | .964       | .813      | .375     | .813     | .836      | .531     | .933       | .778      | .961       | .833     | .250     | .482      | .559      |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 6





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 7

## Groups Printed- Trucks

|             | Route 120<br>From North |      |       | Etna Road<br>From East |      |       | Route 120<br>From South |      |       | Old Etna Road<br>From West |      |       | Int. Total |
|-------------|-------------------------|------|-------|------------------------|------|-------|-------------------------|------|-------|----------------------------|------|-------|------------|
| Start Time  | Left                    | Thru | Right | Left                   | Thru | Right | Left                    | Thru | Right | Left                       | Thru | Right |            |
| 11:00 AM    | 0                       | 0    | 0     | 0                      | 0    | 1     | 0                       | 0    | 0     | 0                          | 0    | 0     | 1          |
| 11:15 AM    | 0                       | 0    | 0     | 0                      | 0    | 1     | 0                       | 0    | 0     | 0                          | 0    | 0     | 1          |
| 11:30 AM    | 1                       | 0    | 0     | 0                      | 0    | 1     | 0                       | 2    | 0     | 0                          | 0    | 0     | 4          |
| 11:45 AM    | 1                       | 1    | 0     | 0                      | 0    | 0     | 0                       | 0    | 0     | 0                          | 0    | 0     | 2          |
| Total       | 2                       | 1    | 0     | 0                      | 0    | 3     | 0                       | 2    | 0     | 0                          | 0    | 0     | 8          |
| 12:00 PM    | 0                       | 0    | 0     | 0                      | 0    | 0     | 0                       | 0    | 0     | 0                          | 0    | 0     | 0          |
| 12:15 PM    | 0                       | 0    | 0     | 0                      | 0    | 1     | 0                       | 0    | 0     | 0                          | 0    | 0     | 1          |
| 12:30 PM    | 0                       | 1    | 0     | 0                      | 0    | 1     | 0                       | 0    | 0     | 0                          | 0    | 0     | 2          |
| 12:45 PM    | 0                       | 1    | 0     | 0                      | 0    | 1     | 0                       | 0    | 0     | 0                          | 0    | 0     | 2          |
| Total       | 0                       | 2    | 0     | 0                      | 0    | 3     | 0                       | 0    | 0     | 0                          | 0    | 0     | 5          |
| Grand Total | 2                       | 3    | 0     | 0                      | 0    | 6     | 0                       | 2    | 0     | 0                          | 0    | 0     | 13         |
| Apprch %    | 40                      | 60   | 0     | 0                      | 0    | 100   | 0                       | 100  | 0     | 0                          | 0    | 0     |            |
| Total %     | 15.4                    | 23.1 | 0     | 0                      | 0    | 46.2  | 0                       | 15.4 | 0     | 0                          | 0    | 0     |            |

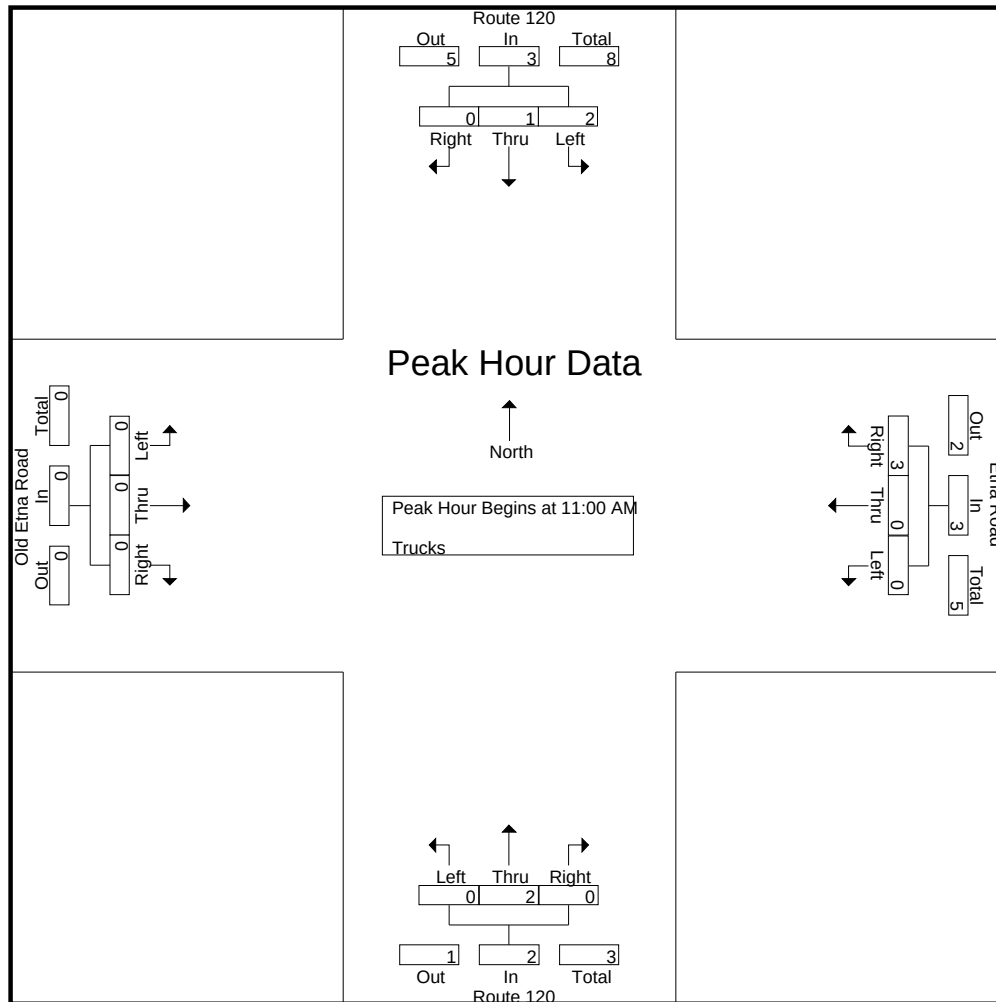
|                                                            | Route 120<br>From North |      |       |            | Etna Road<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Road<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|------------------------|------|-------|------------|-------------------------|------|-------|------------|----------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                   | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                       | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                        |      |       |            |                         |      |       |            |                            |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                        |      |       |            |                         |      |       |            |                            |      |       |            |            |
| 11:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 1     | 1          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 1          |
| 11:15 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 1     | 1          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 1          |
| 11:30 AM                                                   | 1                       | 0    | 0     | 1          | 0                      | 0    | 1     | 1          | 0                       | 2    | 0     | 2          | 0                          | 0    | 0     | 0          | 4          |
| 11:45 AM                                                   | 1                       | 1    | 0     | 2          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 2          |
| Total Volume                                               | 2                       | 1    | 0     | 3          | 0                      | 0    | 3     | 3          | 0                       | 2    | 0     | 2          | 0                          | 0    | 0     | 0          | 8          |
| % App. Total                                               | 66.7                    | 33.3 | 0     |            | 0                      | 0    | 100   |            | 0                       | 100  | 0     |            | 0                          | 0    | 0     |            |            |
| PHF                                                        | .500                    | .250 | .000  | .375       | .000                   | .000 | .750  | .750       | .000                    | .250 | .000  | .250       | .000                       | .000 | .000  | .000       | .500       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S5  
 Site Code : 52933005  
 Start Date : 11/12/2022  
 Page No : 8

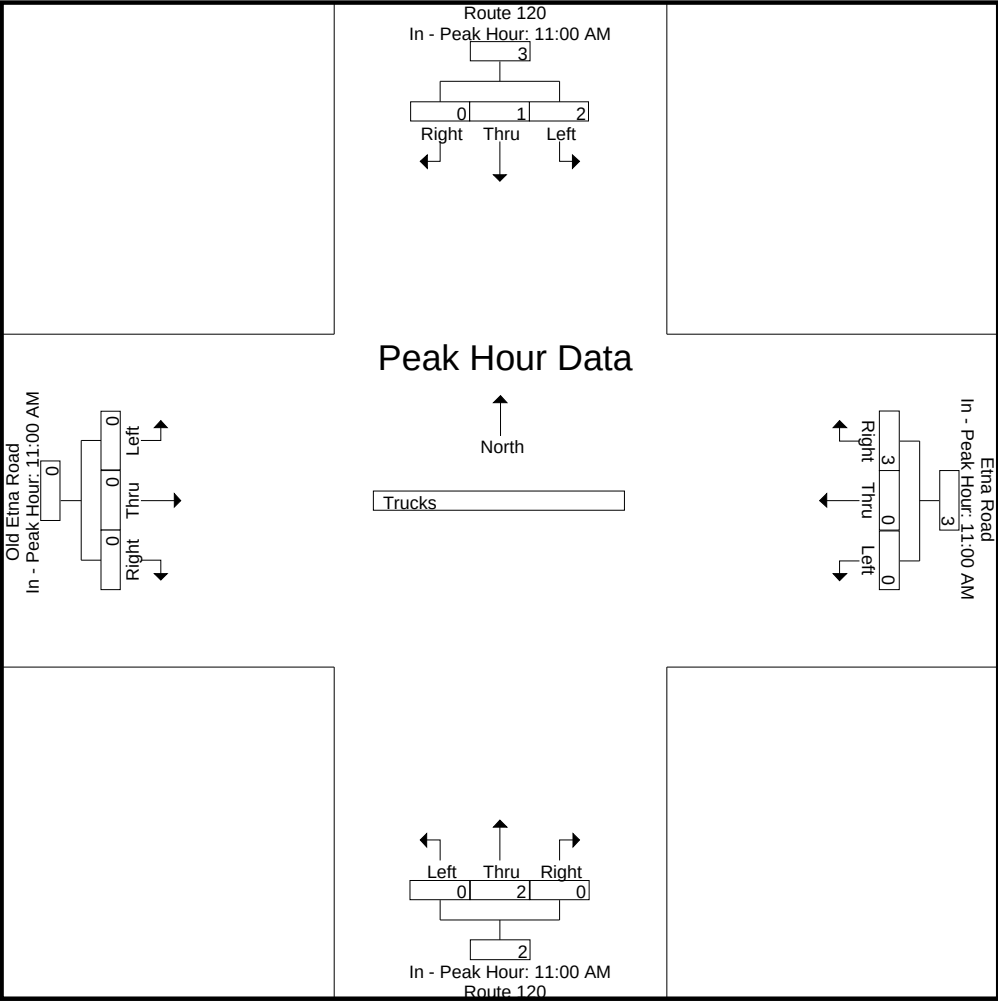


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 1    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 1    | 1    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 1        | 0    | 0    | 1    | 0        | 0    | 1    | 1    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    |
| +45 mins.    | 1        | 1    | 0    | 2    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 2        | 1    | 0    | 3    | 0        | 0    | 3    | 3    | 0        | 2    | 0    | 2    | 0        | 0    | 0    | 0    |
| % App. Total | 66.7     | 33.3 | 0    |      | 0        | 0    | 100  |      | 0        | 100  | 0    |      | 0        | 0    | 0    |      |
| PHF          | .500     | .250 | .000 | .375 | .000     | .000 | .750 | .750 | .000     | .250 | .000 | .250 | .000     | .000 | .000 | .000 |

N/S Street : Route 120  
 E/W Street : Etna Road/Old Etna Road  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S5  
 Site Code : 52933005  
 Start Date : 11/12/2022  
 Page No : 9





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 10

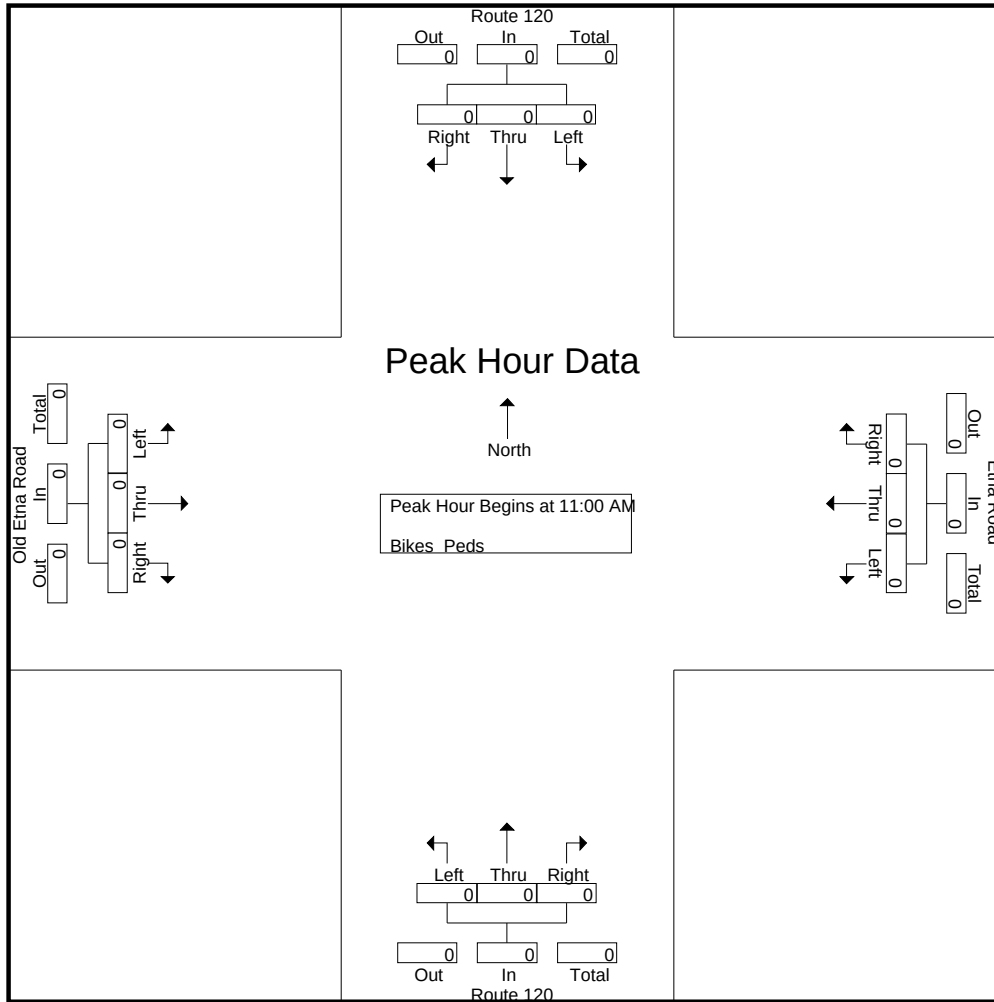
## Groups Printed- Bikes Peds

|             | Route 120<br>From North |      |       |      | Etna Road<br>From East |      |       |      | Route 120<br>From South |      |       |      | Old Etna Road<br>From West |      |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|------|-------|------|------------------------|------|-------|------|-------------------------|------|-------|------|----------------------------|------|-------|------|--------------|--------------|------------|
| Start Time  | Left                    | Thru | Right | Peds | Left                   | Thru | Right | Peds | Left                    | Thru | Right | Peds | Left                       | Thru | Right | Peds |              |              |            |
| 11:00 AM    | 0                       | 0    | 0     | 1    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 1            | 0            | 1          |
| 11:15 AM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| 11:30 AM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| 11:45 AM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0    | 0     | 1    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 1            | 0            | 1          |
| 12:00 PM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| 12:15 PM    | 0                       | 0    | 0     | 1    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                          | 0    | 0     | 0    | 2            | 0            | 2          |
| 12:30 PM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| 12:45 PM    | 0                       | 0    | 0     | 0    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 0    | 0                          | 0    | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0    | 0     | 1    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                          | 0    | 0     | 0    | 2            | 0            | 2          |
| Grand Total | 0                       | 0    | 0     | 2    | 0                      | 0    | 0     | 0    | 0                       | 0    | 0     | 1    | 0                          | 0    | 0     | 0    | 3            | 0            | 3          |
| Apprch %    | 0                       | 0    | 0     |      | 0                      | 0    | 0     |      | 0                       | 0    | 0     |      | 0                          | 0    | 0     |      |              |              |            |
| Total %     |                         |      |       |      |                        |      |       |      |                         |      |       |      |                            |      |       |      | 100          | 0            |            |

|                                                            | Route 120<br>From North |      |       |            | Etna Road<br>From East |      |       |            | Route 120<br>From South |      |       |            | Old Etna Road<br>From West |      |       |            |            |
|------------------------------------------------------------|-------------------------|------|-------|------------|------------------------|------|-------|------------|-------------------------|------|-------|------------|----------------------------|------|-------|------------|------------|
| Start Time                                                 | Left                    | Thru | Right | App. Total | Left                   | Thru | Right | App. Total | Left                    | Thru | Right | App. Total | Left                       | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |      |       |            |                        |      |       |            |                         |      |       |            |                            |      |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |      |       |            |                        |      |       |            |                         |      |       |            |                            |      |       |            |            |
| 11:00 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| Total Volume                                               | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| % App. Total                                               | 0                       | 0    | 0     | 0          | 0                      | 0    | 0     | 0          | 0                       | 0    | 0     | 0          | 0                          | 0    | 0     | 0          | 0          |
| PHF                                                        | .000                    | .000 | .000  | .000       | .000                   | .000 | .000  | .000       | .000                    | .000 | .000  | .000       | .000                       | .000 | .000  | .000       | .000       |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 11

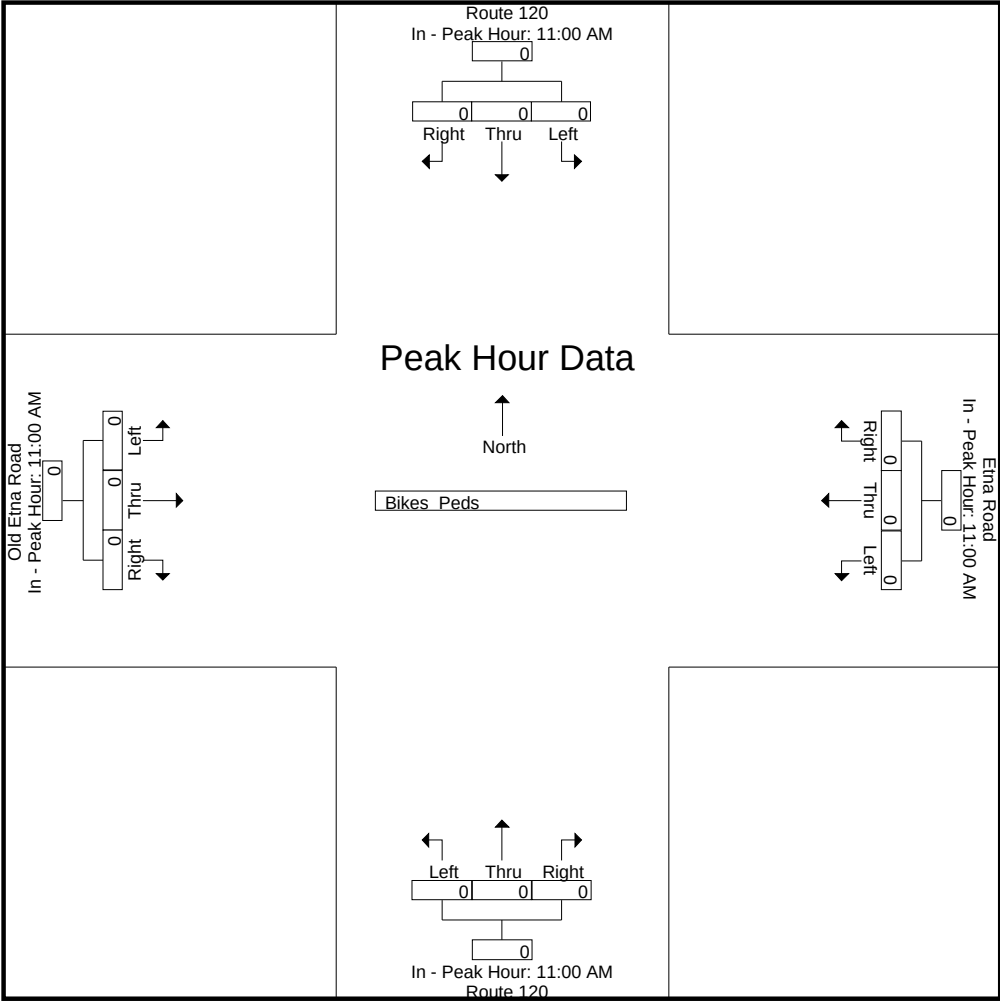


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      | 11:00 AM |      |      |      |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|----------|------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| % App. Total | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0        | 0    | 0    | 0    |
| PHF          | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 | .000     | .000 | .000 | .000 |

N/S Street : Route 120  
E/W Street : Etna Road/Old Etna Road  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S5  
Site Code : 52933005  
Start Date : 11/12/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

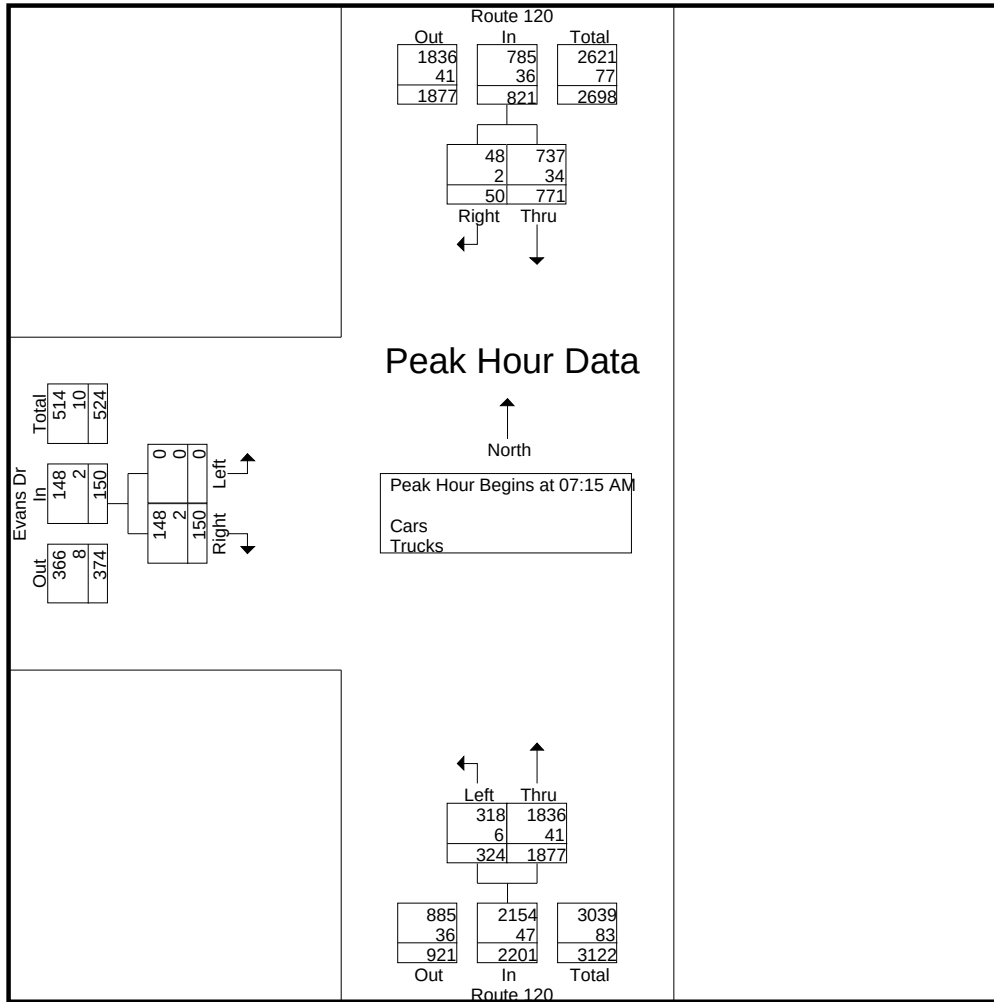
|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Dr<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|-----------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                  | Right |  | Int. Total |
| 07:00 AM    | 175                     | 9     |  | 102                     | 361  |  | 1                     | 20    |  | 668        |
| 07:15 AM    | 176                     | 19    |  | 161                     | 399  |  | 0                     | 52    |  | 807        |
| 07:30 AM    | 202                     | 18    |  | 65                      | 493  |  | 0                     | 36    |  | 814        |
| 07:45 AM    | 207                     | 11    |  | 64                      | 553  |  | 0                     | 35    |  | 870        |
| Total       | 760                     | 57    |  | 392                     | 1806 |  | 1                     | 143   |  | 3159       |
| 08:00 AM    | 186                     | 2     |  | 34                      | 432  |  | 0                     | 27    |  | 681        |
| 08:15 AM    | 134                     | 3     |  | 22                      | 388  |  | 0                     | 21    |  | 568        |
| 08:30 AM    | 161                     | 2     |  | 9                       | 374  |  | 0                     | 9     |  | 555        |
| 08:45 AM    | 164                     | 0     |  | 17                      | 277  |  | 1                     | 11    |  | 470        |
| Total       | 645                     | 7     |  | 82                      | 1471 |  | 1                     | 68    |  | 2274       |
| Grand Total | 1405                    | 64    |  | 474                     | 3277 |  | 2                     | 211   |  | 5433       |
| Apprch %    | 95.6                    | 4.4   |  | 12.6                    | 87.4 |  | 0.9                   | 99.1  |  |            |
| Total %     | 25.9                    | 1.2   |  | 8.7                     | 60.3 |  | 0                     | 3.9   |  |            |
| Cars        | 1334                    | 62    |  | 463                     | 3196 |  | 2                     | 205   |  | 5262       |
| % Cars      | 94.9                    | 96.9  |  | 97.7                    | 97.5 |  | 100                   | 97.2  |  | 96.9       |
| Trucks      | 71                      | 2     |  | 11                      | 81   |  | 0                     | 6     |  | 171        |
| % Trucks    | 5.1                     | 3.1   |  | 2.3                     | 2.5  |  | 0                     | 2.8   |  | 3.1        |

|                                                            | Route 120<br>From North |           |            | Route 120<br>From South |            |            | Evans Dr<br>From West |           |            |            |
|------------------------------------------------------------|-------------------------|-----------|------------|-------------------------|------------|------------|-----------------------|-----------|------------|------------|
| Start Time                                                 | Thru                    | Right     | App. Total | Left                    | Thru       | App. Total | Left                  | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |           |            |                         |            |            |                       |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                         |           |            |                         |            |            |                       |           |            |            |
| 07:15 AM                                                   | 176                     | <b>19</b> | 195        | <b>161</b>              | 399        | 560        | 0                     | <b>52</b> | <b>52</b>  | 807        |
| 07:30 AM                                                   | 202                     | 18        | <b>220</b> | 65                      | 493        | 558        | 0                     | 36        | 36         | 814        |
| 07:45 AM                                                   | <b>207</b>              | 11        | 218        | 64                      | <b>553</b> | <b>617</b> | 0                     | 35        | 35         | <b>870</b> |
| 08:00 AM                                                   | 186                     | 2         | 188        | 34                      | 432        | 466        | 0                     | 27        | 27         | 681        |
| Total Volume                                               | 771                     | 50        | 821        | 324                     | 1877       | 2201       | 0                     | 150       | 150        | 3172       |
| % App. Total                                               | 93.9                    | 6.1       |            | 14.7                    | 85.3       |            | 0                     | 100       |            |            |
| PHF                                                        | .931                    | .658      | .933       | .503                    | .849       | .892       | .000                  | .721      | .721       | .911       |
| Cars                                                       | 737                     | 48        | 785        | 318                     | 1836       | 2154       | 0                     | 148       | 148        | 3087       |
| % Cars                                                     | 95.6                    | 96.0      | 95.6       | 98.1                    | 97.8       | 97.9       | 0                     | 98.7      | 98.7       | 97.3       |
| Trucks                                                     | 34                      | 2         | 36         | 6                       | 41         | 47         | 0                     | 2         | 2          | 85         |
| % Trucks                                                   | 4.4                     | 4.0       | 4.4        | 1.9                     | 2.2        | 2.1        | 0                     | 1.3       | 1.3        | 2.7        |

**Accurate Counts**  
978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

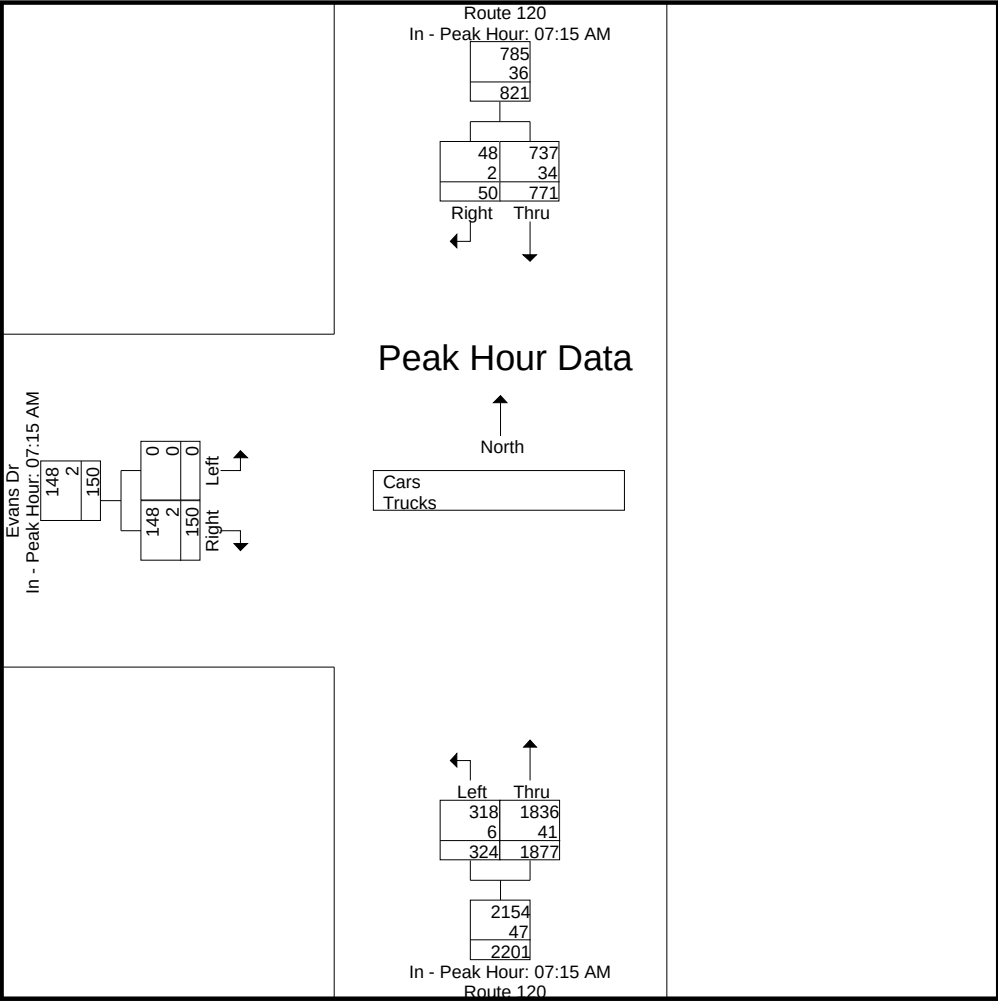
|              | 07:15 AM |      |      | 07:15 AM |      |      | 07:15 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 176      | 19   | 195  | 161      | 399  | 560  | 0        | 52   | 52   |
| +15 mins.    | 202      | 18   | 220  | 65       | 493  | 558  | 0        | 36   | 36   |
| +30 mins.    | 207      | 11   | 218  | 64       | 553  | 617  | 0        | 35   | 35   |
| +45 mins.    | 186      | 2    | 188  | 34       | 432  | 466  | 0        | 27   | 27   |
| Total Volume | 771      | 50   | 821  | 324      | 1877 | 2201 | 0        | 150  | 150  |
| % App. Total | 93.9     | 6.1  |      | 14.7     | 85.3 |      | 0        | 100  |      |
| PHF          | .931     | .658 | .933 | .503     | .849 | .892 | .000     | .721 | .721 |
| Cars         | 737      | 48   | 785  | 318      | 1836 | 2154 | 0        | 148  | 148  |
| % Cars       | 95.6     | 96   | 95.6 | 98.1     | 97.8 | 97.9 | 0        | 98.7 | 98.7 |
| Trucks       | 34       | 2    | 36   | 6        | 41   | 47   | 0        | 2    | 2    |
| % Trucks     | 4.4      | 4    | 4.4  | 1.9      | 2.2  | 2.1  | 0        | 1.3  | 1.3  |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933006  
 Site Code : 52933006  
 Start Date : 11/10/2022  
 Page No : 3



# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933006  
 Site Code : 52933006  
 Start Date : 11/10/2022  
 Page No : 4

## Groups Printed- Cars

|             | Route 120<br>From North |       | Route 120<br>From South |      | Evans Dr<br>From West |       |            |
|-------------|-------------------------|-------|-------------------------|------|-----------------------|-------|------------|
| Start Time  | Thru                    | Right | Left                    | Thru | Left                  | Right | Int. Total |
| 07:00 AM    | 164                     | 9     | 98                      | 355  | 1                     | 17    | 644        |
| 07:15 AM    | 172                     | 19    | 159                     | 388  | 0                     | 51    | 789        |
| 07:30 AM    | 191                     | 17    | 65                      | 482  | 0                     | 35    | 790        |
| 07:45 AM    | 196                     | 10    | 62                      | 539  | 0                     | 35    | 842        |
| Total       | 723                     | 55    | 384                     | 1764 | 1                     | 138   | 3065       |
| 08:00 AM    | 178                     | 2     | 32                      | 427  | 0                     | 27    | 666        |
| 08:15 AM    | 127                     | 3     | 22                      | 374  | 0                     | 21    | 547        |
| 08:30 AM    | 152                     | 2     | 8                       | 365  | 0                     | 8     | 535        |
| 08:45 AM    | 154                     | 0     | 17                      | 266  | 1                     | 11    | 449        |
| Total       | 611                     | 7     | 79                      | 1432 | 1                     | 67    | 2197       |
| Grand Total | 1334                    | 62    | 463                     | 3196 | 2                     | 205   | 5262       |
| Apprch %    | 95.6                    | 4.4   | 12.7                    | 87.3 | 1                     | 99    |            |
| Total %     | 25.4                    | 1.2   | 8.8                     | 60.7 | 0                     | 3.9   |            |

|                                                            | Route 120<br>From North |           |            | Route 120<br>From South |            |            | Evans Dr<br>From West |           |            |            |
|------------------------------------------------------------|-------------------------|-----------|------------|-------------------------|------------|------------|-----------------------|-----------|------------|------------|
| Start Time                                                 | Thru                    | Right     | App. Total | Left                    | Thru       | App. Total | Left                  | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |           |            |                         |            |            |                       |           |            |            |
| Peak Hour for Entire Intersection Begins at 07:15 AM       |                         |           |            |                         |            |            |                       |           |            |            |
| 07:15 AM                                                   | 172                     | <b>19</b> | 191        | <b>159</b>              | 388        | 547        | 0                     | <b>51</b> | <b>51</b>  | 789        |
| 07:30 AM                                                   | 191                     | 17        | <b>208</b> | 65                      | 482        | 547        | 0                     | 35        | 35         | 790        |
| 07:45 AM                                                   | <b>196</b>              | 10        | 206        | 62                      | <b>539</b> | <b>601</b> | 0                     | 35        | 35         | <b>842</b> |
| 08:00 AM                                                   | 178                     | 2         | 180        | 32                      | 427        | 459        | 0                     | 27        | 27         | 666        |
| Total Volume                                               | 737                     | 48        | 785        | 318                     | 1836       | 2154       | 0                     | 148       | 148        | 3087       |
| % App. Total                                               | 93.9                    | 6.1       |            | 14.8                    | 85.2       |            | 0                     | 100       |            |            |
| PHF                                                        | .940                    | .632      | .944       | .500                    | .852       | .896       | .000                  | .725      | .725       | .917       |

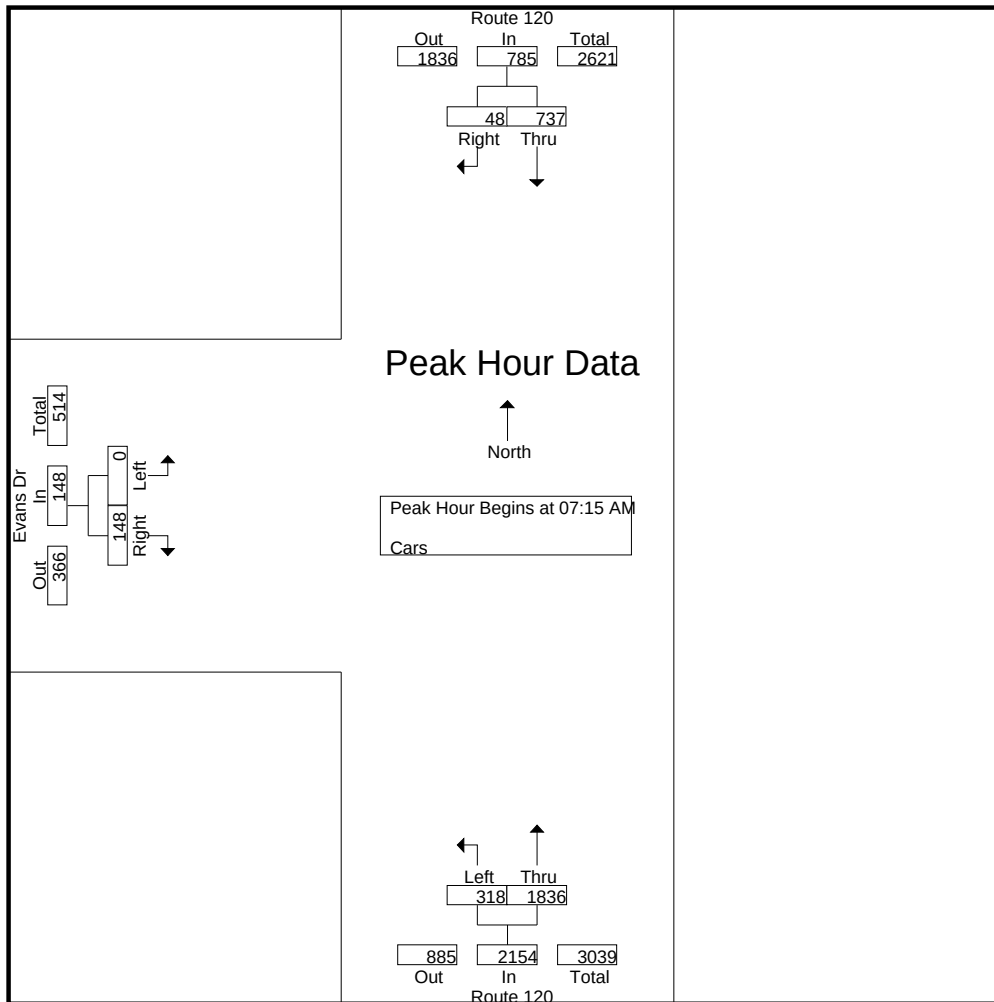


# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933006  
 Site Code : 52933006  
 Start Date : 11/10/2022  
 Page No : 5

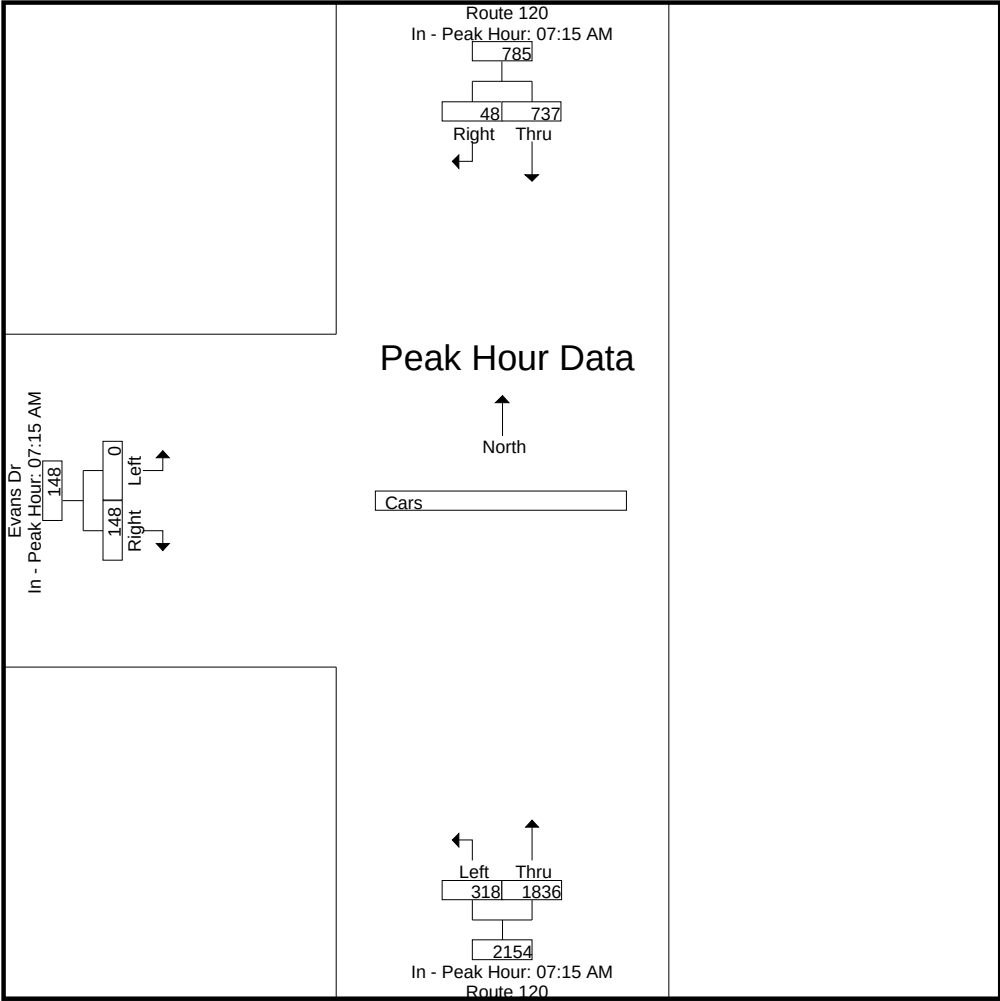


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

|              | 07:15 AM   |           |            | 07:15 AM   |            |            | 07:15 AM |           |           |
|--------------|------------|-----------|------------|------------|------------|------------|----------|-----------|-----------|
| +0 mins.     | 172        | <b>19</b> | 191        | <b>159</b> | 388        | 547        | 0        | <b>51</b> | <b>51</b> |
| +15 mins.    | 191        | 17        | <b>208</b> | 65         | 482        | 547        | 0        | 35        | 35        |
| +30 mins.    | <b>196</b> | 10        | 206        | 62         | <b>539</b> | <b>601</b> | 0        | 35        | 35        |
| +45 mins.    | 178        | 2         | 180        | 32         | 427        | 459        | 0        | 27        | 27        |
| Total Volume | 737        | 48        | 785        | 318        | 1836       | 2154       | 0        | 148       | 148       |
| % App. Total | 93.9       | 6.1       |            | 14.8       | 85.2       |            | 0        | 100       |           |
| PHF          | .940       | .632      | .944       | .500       | .852       | .896       | .000     | .725      | .725      |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 52933006  
 Site Code : 52933006  
 Start Date : 11/10/2022  
 Page No : 7

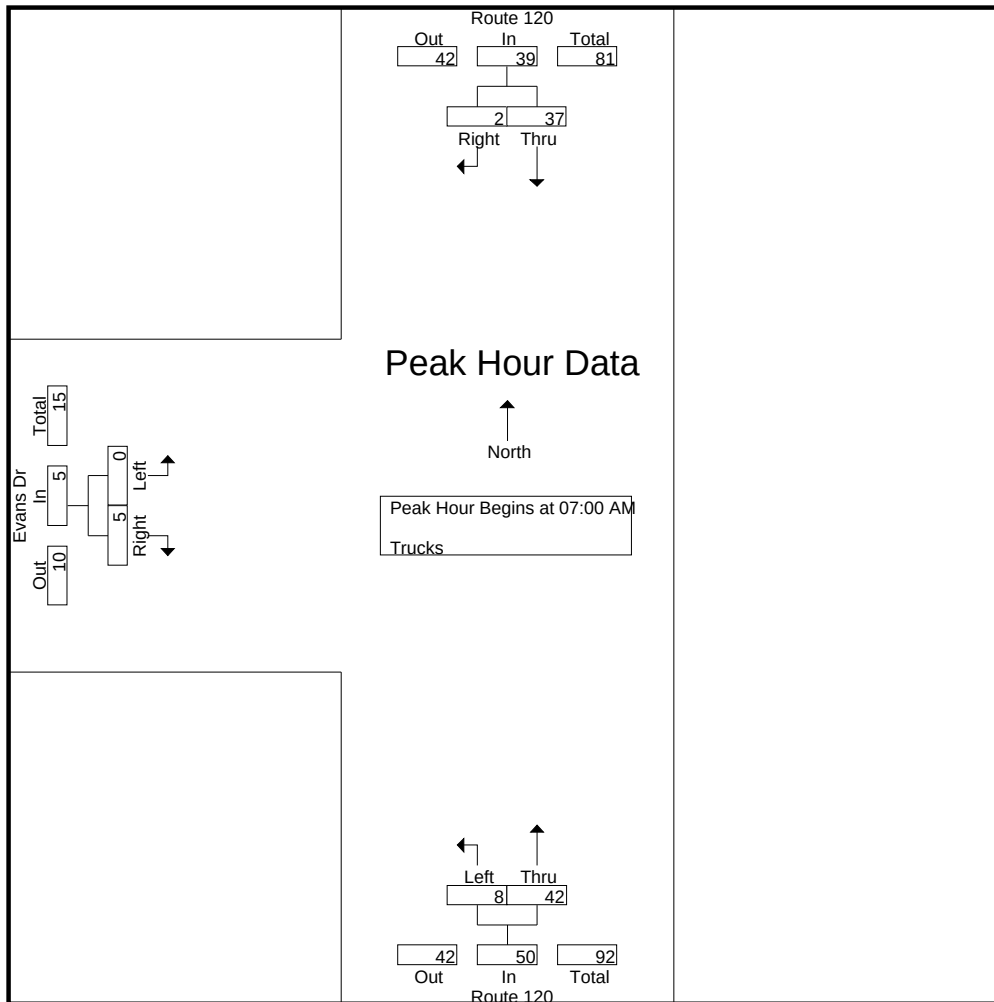
## Groups Printed- Trucks

|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Dr<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|-----------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                  | Right |  | Int. Total |
| 07:00 AM    | 11                      | 0     |  | 4                       | 6    |  | 0                     | 3     |  | 24         |
| 07:15 AM    | 4                       | 0     |  | 2                       | 11   |  | 0                     | 1     |  | 18         |
| 07:30 AM    | 11                      | 1     |  | 0                       | 11   |  | 0                     | 1     |  | 24         |
| 07:45 AM    | 11                      | 1     |  | 2                       | 14   |  | 0                     | 0     |  | 28         |
| Total       | 37                      | 2     |  | 8                       | 42   |  | 0                     | 5     |  | 94         |
| 08:00 AM    | 8                       | 0     |  | 2                       | 5    |  | 0                     | 0     |  | 15         |
| 08:15 AM    | 7                       | 0     |  | 0                       | 14   |  | 0                     | 0     |  | 21         |
| 08:30 AM    | 9                       | 0     |  | 1                       | 9    |  | 0                     | 1     |  | 20         |
| 08:45 AM    | 10                      | 0     |  | 0                       | 11   |  | 0                     | 0     |  | 21         |
| Total       | 34                      | 0     |  | 3                       | 39   |  | 0                     | 1     |  | 77         |
| Grand Total | 71                      | 2     |  | 11                      | 81   |  | 0                     | 6     |  | 171        |
| Apprch %    | 97.3                    | 2.7   |  | 12                      | 88   |  | 0                     | 100   |  |            |
| Total %     | 41.5                    | 1.2   |  | 6.4                     | 47.4 |  | 0                     | 3.5   |  |            |

|                                                            | Route 120<br>From North |          |            | Route 120<br>From South |           |            | Evans Dr<br>From West |          |            |            |
|------------------------------------------------------------|-------------------------|----------|------------|-------------------------|-----------|------------|-----------------------|----------|------------|------------|
| Start Time                                                 | Thru                    | Right    | App. Total | Left                    | Thru      | App. Total | Left                  | Right    | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |          |            |                         |           |            |                       |          |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |          |            |                         |           |            |                       |          |            |            |
| 07:00 AM                                                   | <b>11</b>               | 0        | 11         | <b>4</b>                | 6         | 10         | 0                     | <b>3</b> | <b>3</b>   | 24         |
| 07:15 AM                                                   | 4                       | 0        | 4          | 2                       | 11        | 13         | 0                     | 1        | 1          | 18         |
| 07:30 AM                                                   | 11                      | <b>1</b> | <b>12</b>  | 0                       | 11        | 11         | 0                     | 1        | 1          | 24         |
| 07:45 AM                                                   | 11                      | 1        | 12         | 2                       | <b>14</b> | <b>16</b>  | 0                     | 0        | 0          | <b>28</b>  |
| Total Volume                                               | 37                      | 2        | 39         | 8                       | 42        | 50         | 0                     | 5        | 5          | 94         |
| % App. Total                                               | 94.9                    | 5.1      |            | 16                      | 84        |            | 0                     | 100      |            |            |
| PHF                                                        | .841                    | .500     | .813       | .500                    | .750      | .781       | .000                  | .417     | .417       | .839       |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 8



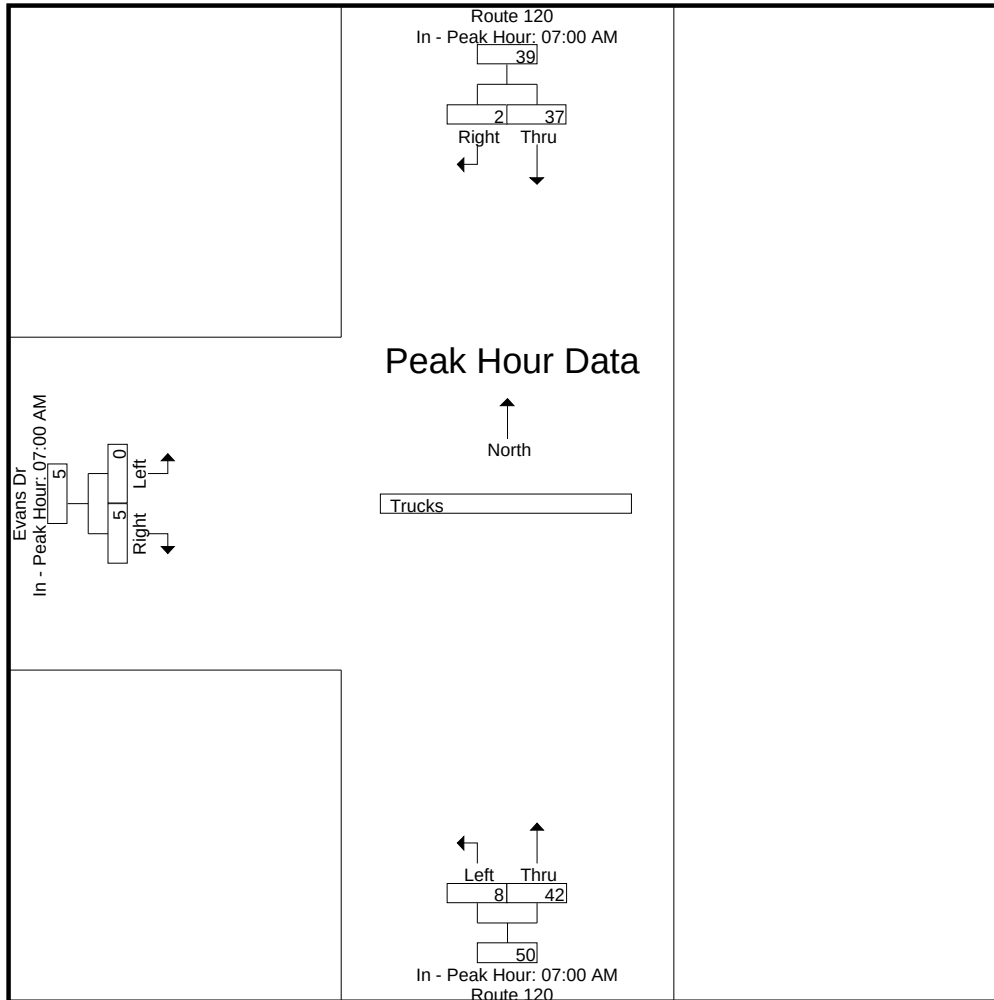
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:00 AM  |          |           | 07:00 AM |           |           | 07:00 AM |          |          |
|--------------|-----------|----------|-----------|----------|-----------|-----------|----------|----------|----------|
| +0 mins.     | <b>11</b> | 0        | 11        | <b>4</b> | 6         | 10        | 0        | <b>3</b> | <b>3</b> |
| +15 mins.    | 4         | 0        | 4         | 2        | 11        | 13        | 0        | 1        | 1        |
| +30 mins.    | 11        | <b>1</b> | <b>12</b> | 0        | 11        | 11        | 0        | 1        | 1        |
| +45 mins.    | 11        | 1        | 12        | 2        | <b>14</b> | <b>16</b> | 0        | 0        | 0        |
| Total Volume | 37        | 2        | 39        | 8        | 42        | 50        | 0        | 5        | 5        |
| % App. Total | 94.9      | 5.1      |           | 16       | 84        |           | 0        | 100      |          |
| PHF          | .841      | .500     | .813      | .500     | .750      | .781      | .000     | .417     | .417     |



N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 9



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 10

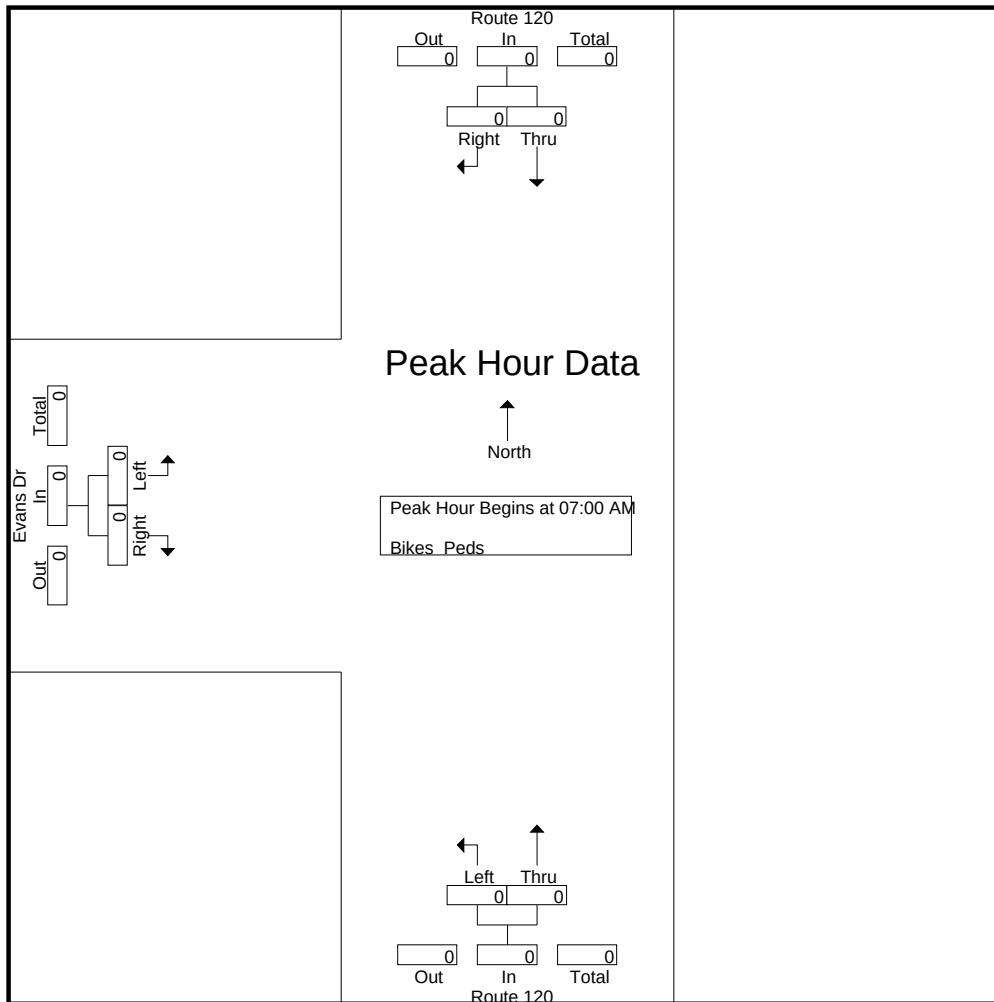
## Groups Printed- Bikes Peds

|             | Route 120<br>From North |       |      | Route 120<br>From South |      |      | Evans Dr<br>From West |       |      |              |              |            |
|-------------|-------------------------|-------|------|-------------------------|------|------|-----------------------|-------|------|--------------|--------------|------------|
| Start Time  | Thru                    | Right | Peds | Left                    | Thru | Peds | Left                  | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 07:15 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 07:30 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 07:45 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 08:00 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 08:15 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 08:30 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 08:45 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Grand Total | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Apprch %    | 0                       | 0     |      | 0                       | 0    |      | 0                     | 0     |      |              |              |            |
| Total %     |                         |       |      |                         |      |      |                       |       |      | 0            | 0            |            |

|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Dr<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|-----------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                  | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 |                         |       |            |                         |      |            |                       |       |            |            |
| Peak Hour for Entire Intersection Begins at 07:00 AM       |                         |       |            |                         |      |            |                       |       |            |            |
| 07:00 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| 07:15 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| 07:30 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| 07:45 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| Total Volume                                               | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| % App. Total                                               | 0                       | 0     |            | 0                       | 0    |            | 0                     | 0     |            |            |
| PHF                                                        | .000                    | .000  | .000       | .000                    | .000 | .000       | .000                  | .000  | .000       | .000       |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 11

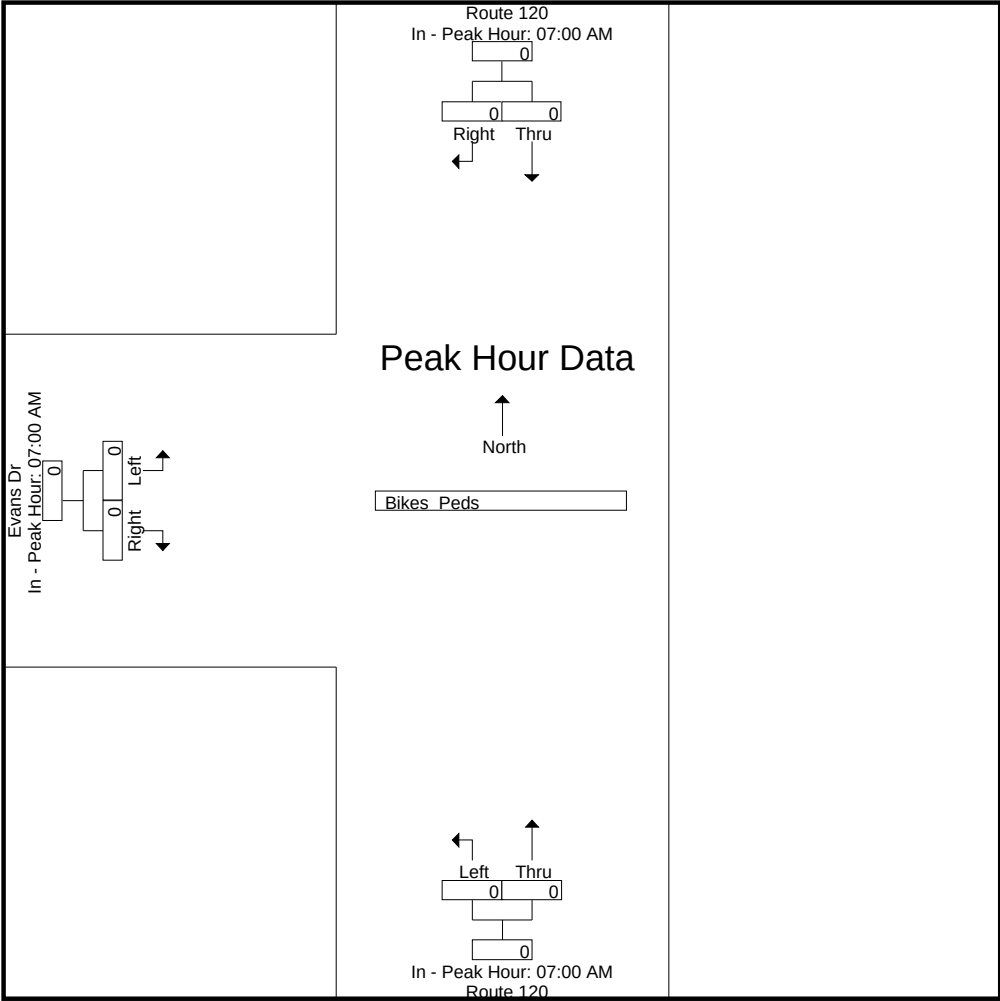


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 07:00 AM |      |      | 07:00 AM |      |      | 07:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 0    |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .000 | .000 | .000     | .000 | .000 |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Route 120<br>From North |       | Route 120<br>From South |      | Evans Dr<br>From West |       |            |
|-------------|-------------------------|-------|-------------------------|------|-----------------------|-------|------------|
| Start Time  | Thru                    | Right | Left                    | Thru | Left                  | Right | Int. Total |
| 02:00 PM    | 268                     | 2     | 31                      | 223  | 0                     | 56    | 580        |
| 02:15 PM    | 342                     | 5     | 28                      | 239  | 0                     | 32    | 646        |
| 02:30 PM    | 355                     | 5     | 33                      | 263  | 0                     | 30    | 686        |
| 02:45 PM    | 351                     | 11    | 30                      | 273  | 1                     | 36    | 702        |
| Total       | 1316                    | 23    | 122                     | 998  | 1                     | 154   | 2614       |
| 03:00 PM    | 404                     | 2     | 21                      | 210  | 2                     | 50    | 689        |
| 03:15 PM    | 385                     | 1     | 12                      | 181  | 2                     | 38    | 619        |
| 03:30 PM    | 473                     | 2     | 14                      | 190  | 1                     | 25    | 705        |
| 03:45 PM    | 452                     | 2     | 13                      | 212  | 1                     | 21    | 701        |
| Total       | 1714                    | 7     | 60                      | 793  | 6                     | 134   | 2714       |
| 04:00 PM    | 427                     | 2     | 13                      | 181  | 0                     | 29    | 652        |
| 04:15 PM    | 497                     | 2     | 10                      | 183  | 0                     | 28    | 720        |
| 04:30 PM    | 471                     | 0     | 20                      | 192  | 2                     | 29    | 714        |
| 04:45 PM    | 478                     | 8     | 13                      | 207  | 1                     | 19    | 726        |
| Total       | 1873                    | 12    | 56                      | 763  | 3                     | 105   | 2812       |
| 05:00 PM    | 496                     | 1     | 18                      | 193  | 1                     | 32    | 741        |
| 05:15 PM    | 532                     | 1     | 13                      | 205  | 0                     | 29    | 780        |
| 05:30 PM    | 363                     | 0     | 6                       | 165  | 2                     | 15    | 551        |
| 05:45 PM    | 284                     | 1     | 10                      | 141  | 0                     | 11    | 447        |
| Total       | 1675                    | 3     | 47                      | 704  | 3                     | 87    | 2519       |
| Grand Total | 6578                    | 45    | 285                     | 3258 | 13                    | 480   | 10659      |
| Apprch %    | 99.3                    | 0.7   | 8                       | 92   | 2.6                   | 97.4  |            |
| Total %     | 61.7                    | 0.4   | 2.7                     | 30.6 | 0.1                   | 4.5   |            |
| Cars        | 6479                    | 43    | 268                     | 3181 | 13                    | 475   | 10459      |
| % Cars      | 98.5                    | 95.6  | 94                      | 97.6 | 100                   | 99    | 98.1       |
| Trucks      | 99                      | 2     | 17                      | 77   | 0                     | 5     | 200        |
| % Trucks    | 1.5                     | 4.4   | 6                       | 2.4  | 0                     | 1     | 1.9        |

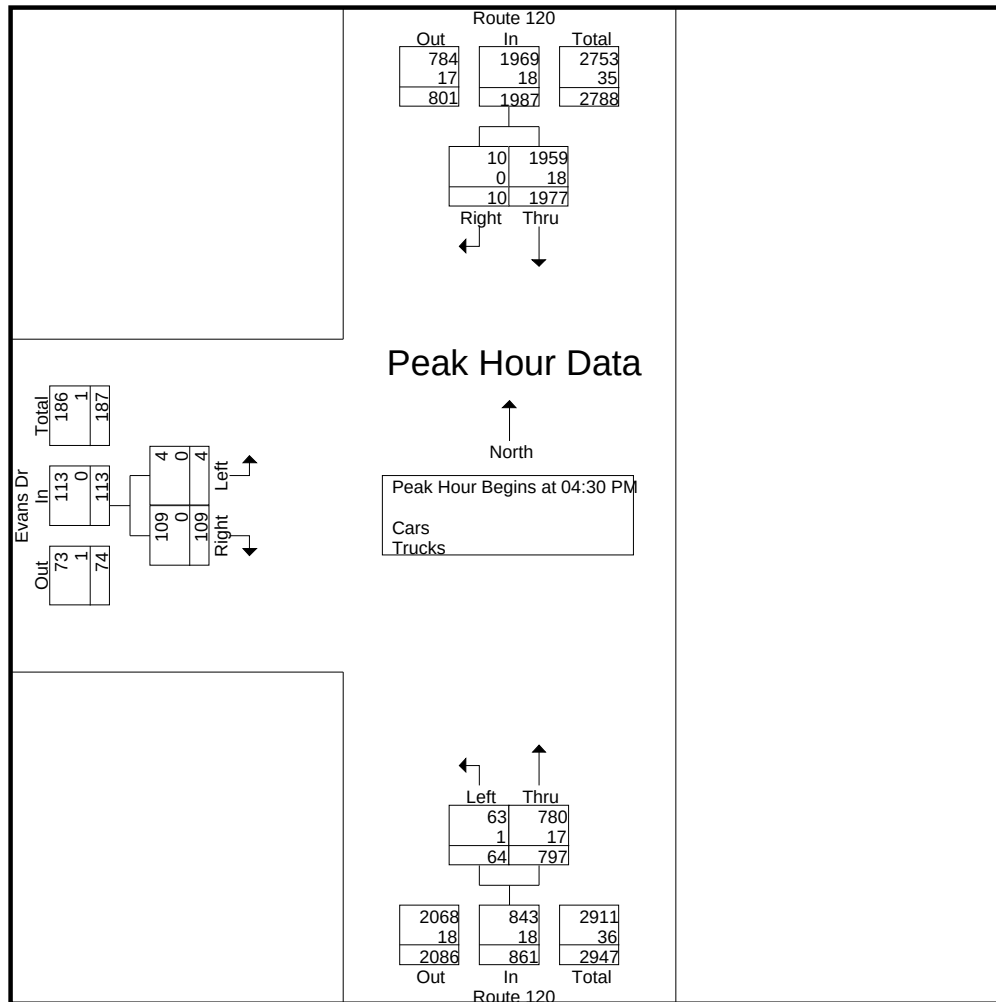
|                                                            | Route 120<br>From North |          |            | Route 120<br>From South |            |            | Evans Dr<br>From West |           |            |            |
|------------------------------------------------------------|-------------------------|----------|------------|-------------------------|------------|------------|-----------------------|-----------|------------|------------|
| Start Time                                                 | Thru                    | Right    | App. Total | Left                    | Thru       | App. Total | Left                  | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |          |            |                         |            |            |                       |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |          |            |                         |            |            |                       |           |            |            |
| 04:30 PM                                                   | 471                     | 0        | 471        | <b>20</b>               | 192        | 212        | <b>2</b>              | 29        | 31         | 714        |
| 04:45 PM                                                   | 478                     | <b>8</b> | 486        | 13                      | <b>207</b> | <b>220</b> | 1                     | 19        | 20         | 726        |
| 05:00 PM                                                   | 496                     | 1        | 497        | 18                      | 193        | 211        | 1                     | <b>32</b> | <b>33</b>  | 741        |
| 05:15 PM                                                   | <b>532</b>              | 1        | <b>533</b> | 13                      | 205        | 218        | 0                     | 29        | 29         | <b>780</b> |
| Total Volume                                               | 1977                    | 10       | 1987       | 64                      | 797        | 861        | 4                     | 109       | 113        | 2961       |
| % App. Total                                               | 99.5                    | 0.5      |            | 7.4                     | 92.6       |            | 3.5                   | 96.5      |            |            |
| PHF                                                        | .929                    | .313     | .932       | .800                    | .963       | .978       | .500                  | .852      | .856       | .949       |
| Cars                                                       | 1959                    | 10       | 1969       | 63                      | 780        | 843        | 4                     | 109       | 113        | 2925       |
| % Cars                                                     | 99.1                    | 100      | 99.1       | 98.4                    | 97.9       | 97.9       | 100                   | 100       | 100        | 98.8       |
| Trucks                                                     | 18                      | 0        | 18         | 1                       | 17         | 18         | 0                     | 0         | 0          | 36         |
| % Trucks                                                   | 0.9                     | 0        | 0.9        | 1.6                     | 2.1        | 2.1        | 0                     | 0         | 0          | 1.2        |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 2



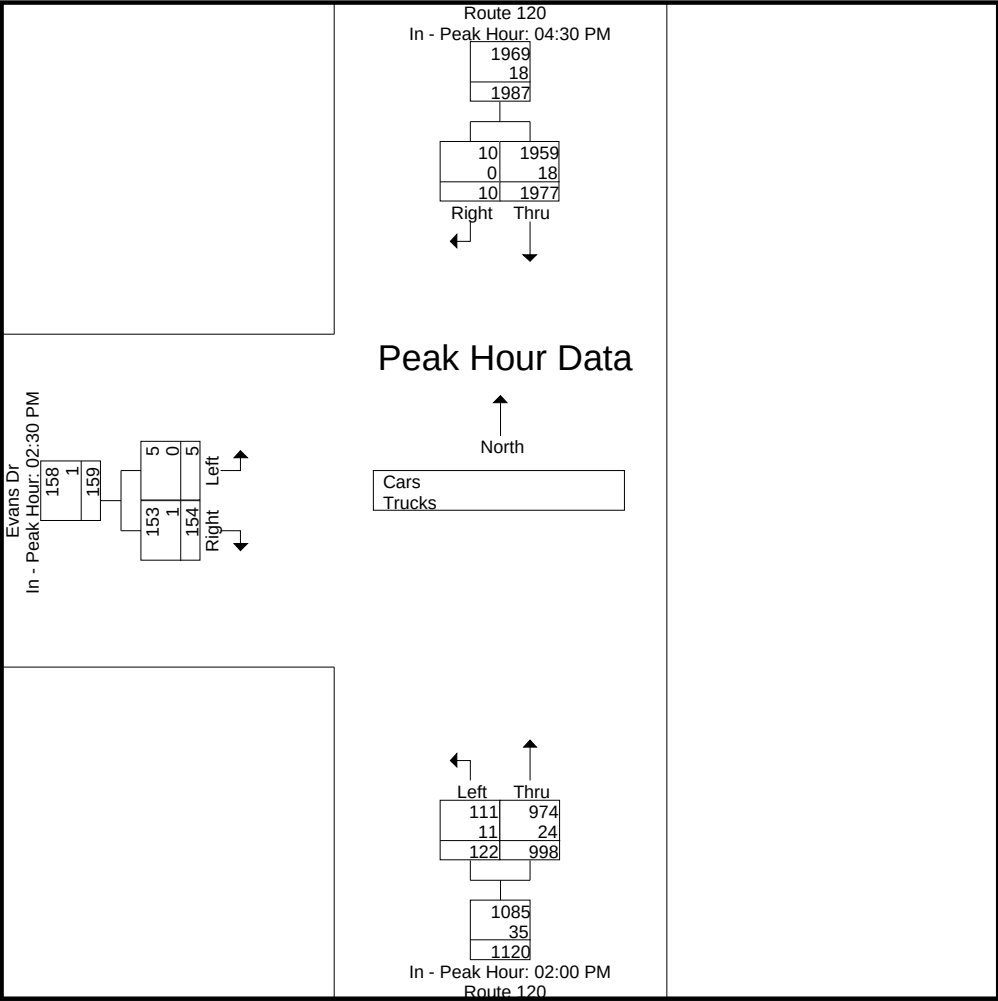
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

|              | 04:30 PM |      |      | 02:00 PM |      |      | 02:30 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 471      | 0    | 471  | 31       | 223  | 254  | 0        | 30   | 30   |
| +15 mins.    | 478      | 8    | 486  | 28       | 239  | 267  | 1        | 36   | 37   |
| +30 mins.    | 496      | 1    | 497  | 33       | 263  | 296  | 2        | 50   | 52   |
| +45 mins.    | 532      | 1    | 533  | 30       | 273  | 303  | 2        | 38   | 40   |
| Total Volume | 1977     | 10   | 1987 | 122      | 998  | 1120 | 5        | 154  | 159  |
| % App. Total | 99.5     | 0.5  |      | 10.9     | 89.1 |      | 3.1      | 96.9 |      |
| PHF          | .929     | .313 | .932 | .924     | .914 | .924 | .625     | .770 | .764 |
| Cars         | 1959     | 10   | 1969 | 111      | 974  | 1085 | 5        | 153  | 158  |
| % Cars       | 99.1     | 100  | 99.1 | 91       | 97.6 | 96.9 | 100      | 99.4 | 99.4 |
| Trucks       | 18       | 0    | 18   | 11       | 24   | 35   | 0        | 1    | 1    |
| % Trucks     | 0.9      | 0    | 0.9  | 9        | 2.4  | 3.1  | 0        | 0.6  | 0.6  |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 3



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 4

## Groups Printed- Cars

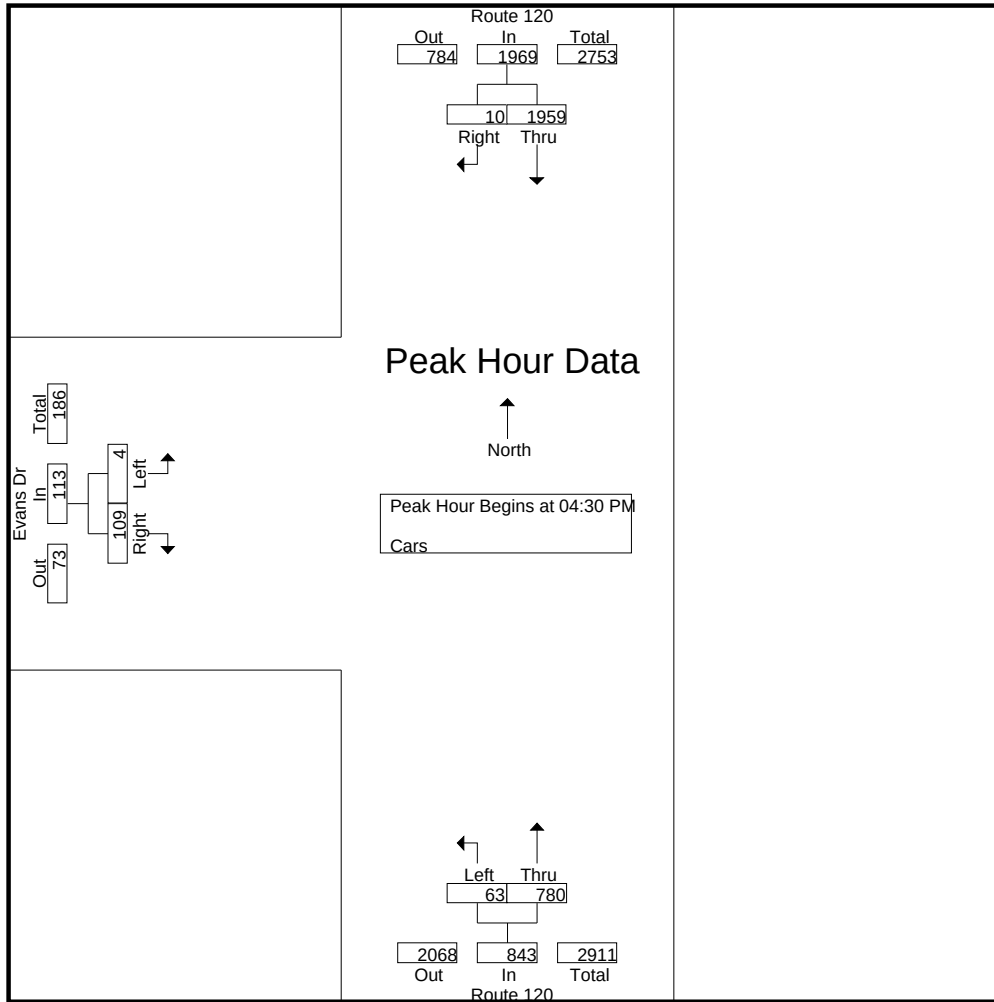
|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Dr<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|-----------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                  | Right |  | Int. Total |
| 02:00 PM    | 256                     | 2     |  | 29                      | 216  |  | 0                     | 53    |  | 556        |
| 02:15 PM    | 341                     | 4     |  | 24                      | 232  |  | 0                     | 31    |  | 632        |
| 02:30 PM    | 339                     | 5     |  | 29                      | 258  |  | 0                     | 29    |  | 660        |
| 02:45 PM    | 338                     | 11    |  | 29                      | 268  |  | 1                     | 36    |  | 683        |
| Total       | 1274                    | 22    |  | 111                     | 974  |  | 1                     | 149   |  | 2531       |
| 03:00 PM    | 399                     | 2     |  | 20                      | 205  |  | 2                     | 50    |  | 678        |
| 03:15 PM    | 380                     | 1     |  | 10                      | 177  |  | 2                     | 38    |  | 608        |
| 03:30 PM    | 468                     | 1     |  | 14                      | 180  |  | 1                     | 25    |  | 689        |
| 03:45 PM    | 445                     | 2     |  | 12                      | 205  |  | 1                     | 21    |  | 686        |
| Total       | 1692                    | 6     |  | 56                      | 767  |  | 6                     | 134   |  | 2661       |
| 04:00 PM    | 422                     | 2     |  | 12                      | 181  |  | 0                     | 29    |  | 646        |
| 04:15 PM    | 492                     | 2     |  | 10                      | 180  |  | 0                     | 28    |  | 712        |
| 04:30 PM    | 466                     | 0     |  | 19                      | 188  |  | 2                     | 29    |  | 704        |
| 04:45 PM    | 474                     | 8     |  | 13                      | 199  |  | 1                     | 19    |  | 714        |
| Total       | 1854                    | 12    |  | 54                      | 748  |  | 3                     | 105   |  | 2776       |
| 05:00 PM    | 492                     | 1     |  | 18                      | 191  |  | 1                     | 32    |  | 735        |
| 05:15 PM    | 527                     | 1     |  | 13                      | 202  |  | 0                     | 29    |  | 772        |
| 05:30 PM    | 358                     | 0     |  | 6                       | 160  |  | 2                     | 15    |  | 541        |
| 05:45 PM    | 282                     | 1     |  | 10                      | 139  |  | 0                     | 11    |  | 443        |
| Total       | 1659                    | 3     |  | 47                      | 692  |  | 3                     | 87    |  | 2491       |
| Grand Total | 6479                    | 43    |  | 268                     | 3181 |  | 13                    | 475   |  | 10459      |
| Apprch %    | 99.3                    | 0.7   |  | 7.8                     | 92.2 |  | 2.7                   | 97.3  |  |            |
| Total %     | 61.9                    | 0.4   |  | 2.6                     | 30.4 |  | 0.1                   | 4.5   |  |            |

|                                                            | Route 120<br>From North |          |            | Route 120<br>From South |            |            | Evans Dr<br>From West |           |            |            |
|------------------------------------------------------------|-------------------------|----------|------------|-------------------------|------------|------------|-----------------------|-----------|------------|------------|
| Start Time                                                 | Thru                    | Right    | App. Total | Left                    | Thru       | App. Total | Left                  | Right     | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |          |            |                         |            |            |                       |           |            |            |
| Peak Hour for Entire Intersection Begins at 04:30 PM       |                         |          |            |                         |            |            |                       |           |            |            |
| 04:30 PM                                                   | 466                     | 0        | 466        | <b>19</b>               | 188        | 207        | <b>2</b>              | 29        | 31         | 704        |
| 04:45 PM                                                   | 474                     | <b>8</b> | 482        | 13                      | 199        | 212        | 1                     | 19        | 20         | 714        |
| 05:00 PM                                                   | 492                     | 1        | 493        | 18                      | 191        | 209        | 1                     | <b>32</b> | <b>33</b>  | 735        |
| 05:15 PM                                                   | <b>527</b>              | 1        | <b>528</b> | 13                      | <b>202</b> | <b>215</b> | 0                     | 29        | 29         | <b>772</b> |
| Total Volume                                               | 1959                    | 10       | 1969       | 63                      | 780        | 843        | 4                     | 109       | 113        | 2925       |
| % App. Total                                               | 99.5                    | 0.5      |            | 7.5                     | 92.5       |            | 3.5                   | 96.5      |            |            |
| PHF                                                        | .929                    | .313     | .932       | .829                    | .965       | .980       | .500                  | .852      | .856       | .947       |



N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 5



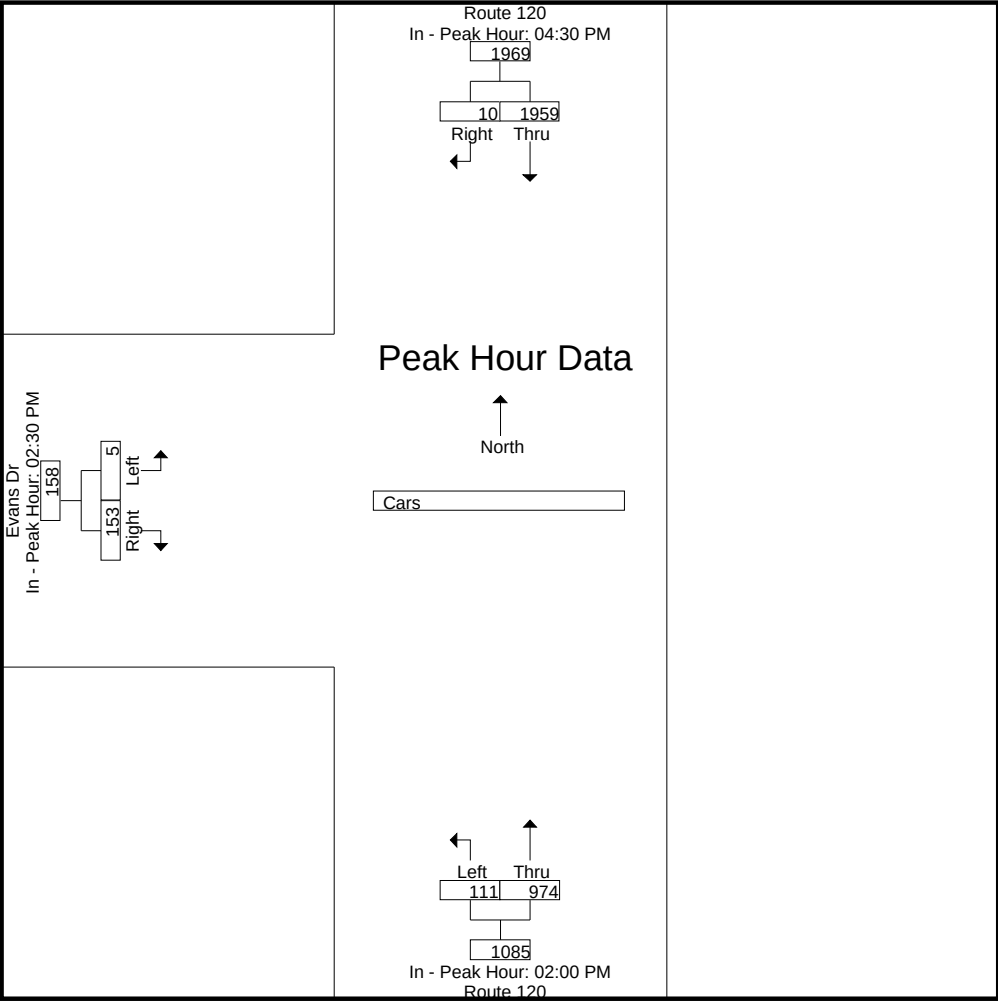
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 04:30 PM   |          |            | 02:00 PM  |            |            | 02:30 PM |           |           |
|--------------|------------|----------|------------|-----------|------------|------------|----------|-----------|-----------|
| +0 mins.     | 466        | 0        | 466        | <b>29</b> | 216        | 245        | 0        | 29        | 29        |
| +15 mins.    | 474        | <b>8</b> | 482        | 24        | 232        | 256        | 1        | 36        | 37        |
| +30 mins.    | 492        | 1        | 493        | 29        | 258        | 287        | <b>2</b> | <b>50</b> | <b>52</b> |
| +45 mins.    | <b>527</b> | 1        | <b>528</b> | 29        | <b>268</b> | <b>297</b> | 2        | 38        | 40        |
| Total Volume | 1959       | 10       | 1969       | 111       | 974        | 1085       | 5        | 153       | 158       |
| % App. Total | 99.5       | 0.5      |            | 10.2      | 89.8       |            | 3.2      | 96.8      |           |
| PHF          | .929       | .313     | .932       | .957      | .909       | .913       | .625     | .765      | .760      |

Accurate Counts  
978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 7

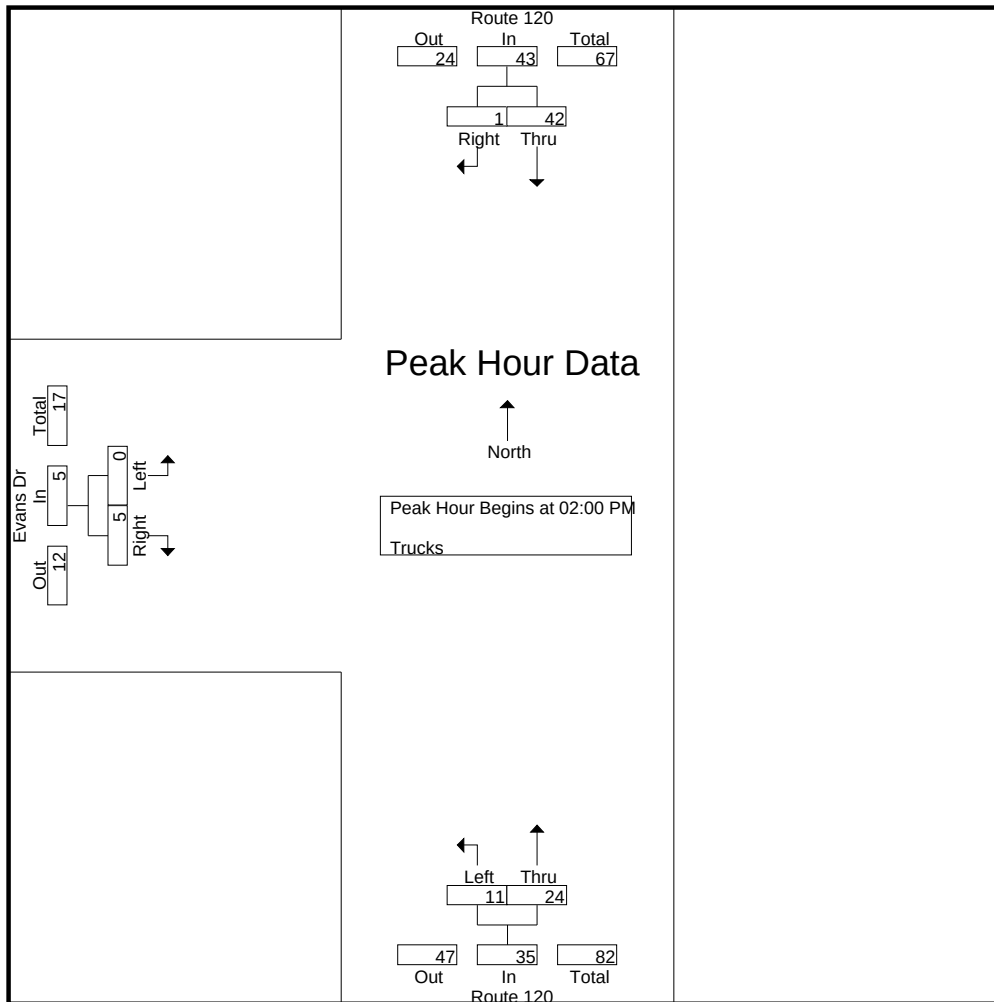
## Groups Printed- Trucks

|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Dr<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|-----------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                  | Right |  | Int. Total |
| 02:00 PM    | 12                      | 0     |  | 2                       | 7    |  | 0                     | 3     |  | 24         |
| 02:15 PM    | 1                       | 1     |  | 4                       | 7    |  | 0                     | 1     |  | 14         |
| 02:30 PM    | 16                      | 0     |  | 4                       | 5    |  | 0                     | 1     |  | 26         |
| 02:45 PM    | 13                      | 0     |  | 1                       | 5    |  | 0                     | 0     |  | 19         |
| Total       | 42                      | 1     |  | 11                      | 24   |  | 0                     | 5     |  | 83         |
| 03:00 PM    | 5                       | 0     |  | 1                       | 5    |  | 0                     | 0     |  | 11         |
| 03:15 PM    | 5                       | 0     |  | 2                       | 4    |  | 0                     | 0     |  | 11         |
| 03:30 PM    | 5                       | 1     |  | 0                       | 10   |  | 0                     | 0     |  | 16         |
| 03:45 PM    | 7                       | 0     |  | 1                       | 7    |  | 0                     | 0     |  | 15         |
| Total       | 22                      | 1     |  | 4                       | 26   |  | 0                     | 0     |  | 53         |
| 04:00 PM    | 5                       | 0     |  | 1                       | 0    |  | 0                     | 0     |  | 6          |
| 04:15 PM    | 5                       | 0     |  | 0                       | 3    |  | 0                     | 0     |  | 8          |
| 04:30 PM    | 5                       | 0     |  | 1                       | 4    |  | 0                     | 0     |  | 10         |
| 04:45 PM    | 4                       | 0     |  | 0                       | 8    |  | 0                     | 0     |  | 12         |
| Total       | 19                      | 0     |  | 2                       | 15   |  | 0                     | 0     |  | 36         |
| 05:00 PM    | 4                       | 0     |  | 0                       | 2    |  | 0                     | 0     |  | 6          |
| 05:15 PM    | 5                       | 0     |  | 0                       | 3    |  | 0                     | 0     |  | 8          |
| 05:30 PM    | 5                       | 0     |  | 0                       | 5    |  | 0                     | 0     |  | 10         |
| 05:45 PM    | 2                       | 0     |  | 0                       | 2    |  | 0                     | 0     |  | 4          |
| Total       | 16                      | 0     |  | 0                       | 12   |  | 0                     | 0     |  | 28         |
| Grand Total | 99                      | 2     |  | 17                      | 77   |  | 0                     | 5     |  | 200        |
| Apprch %    | 98                      | 2     |  | 18.1                    | 81.9 |  | 0                     | 100   |  |            |
| Total %     | 49.5                    | 1     |  | 8.5                     | 38.5 |  | 0                     | 2.5   |  |            |

|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Dr<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|-----------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                  | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                       |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                         |       |            |                         |      |            |                       |       |            |            |
| 02:00 PM                                                   | 12                      | 0     | 12         | 2                       | 7    | 9          | 0                     | 3     | 3          | 24         |
| 02:15 PM                                                   | 1                       | 1     | 2          | 4                       | 7    | 11         | 0                     | 1     | 1          | 14         |
| 02:30 PM                                                   | 16                      | 0     | 16         | 4                       | 5    | 9          | 0                     | 1     | 1          | 26         |
| 02:45 PM                                                   | 13                      | 0     | 13         | 1                       | 5    | 6          | 0                     | 0     | 0          | 19         |
| Total Volume                                               | 42                      | 1     | 43         | 11                      | 24   | 35         | 0                     | 5     | 5          | 83         |
| % App. Total                                               | 97.7                    | 2.3   |            | 31.4                    | 68.6 |            | 0                     | 100   |            |            |
| PHF                                                        | .656                    | .250  | .672       | .688                    | .857 | .795       | .000                  | .417  | .417       | .798       |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 8



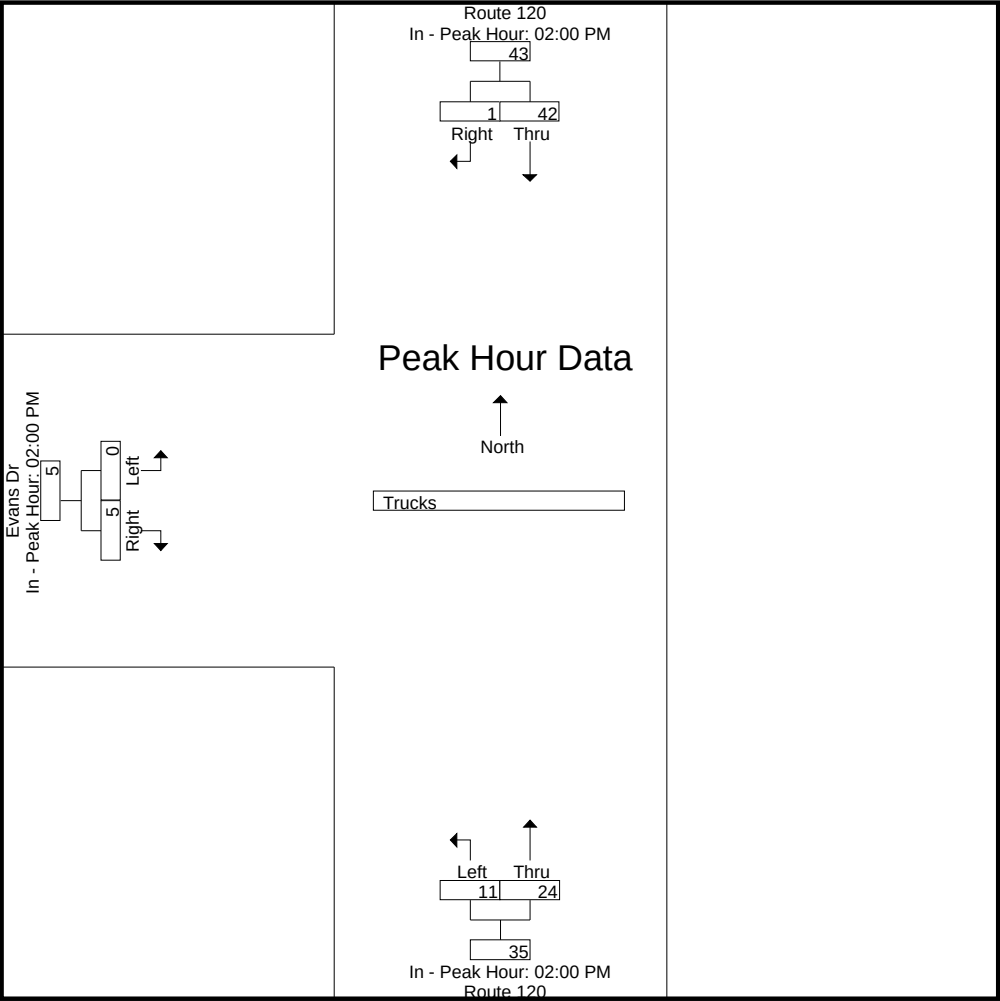
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:00 PM |      |      | 02:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 12       | 0    | 12   | 2        | 7    | 9    | 0        | 3    | 3    |
| +15 mins.    | 1        | 1    | 2    | 4        | 7    | 11   | 0        | 1    | 1    |
| +30 mins.    | 16       | 0    | 16   | 4        | 5    | 9    | 0        | 1    | 1    |
| +45 mins.    | 13       | 0    | 13   | 1        | 5    | 6    | 0        | 0    | 0    |
| Total Volume | 42       | 1    | 43   | 11       | 24   | 35   | 0        | 5    | 5    |
| % App. Total | 97.7     | 2.3  |      | 31.4     | 68.6 |      | 0        | 100  |      |
| PHF          | .656     | .250 | .672 | .688     | .857 | .795 | .000     | .417 | .417 |



N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 9



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 10

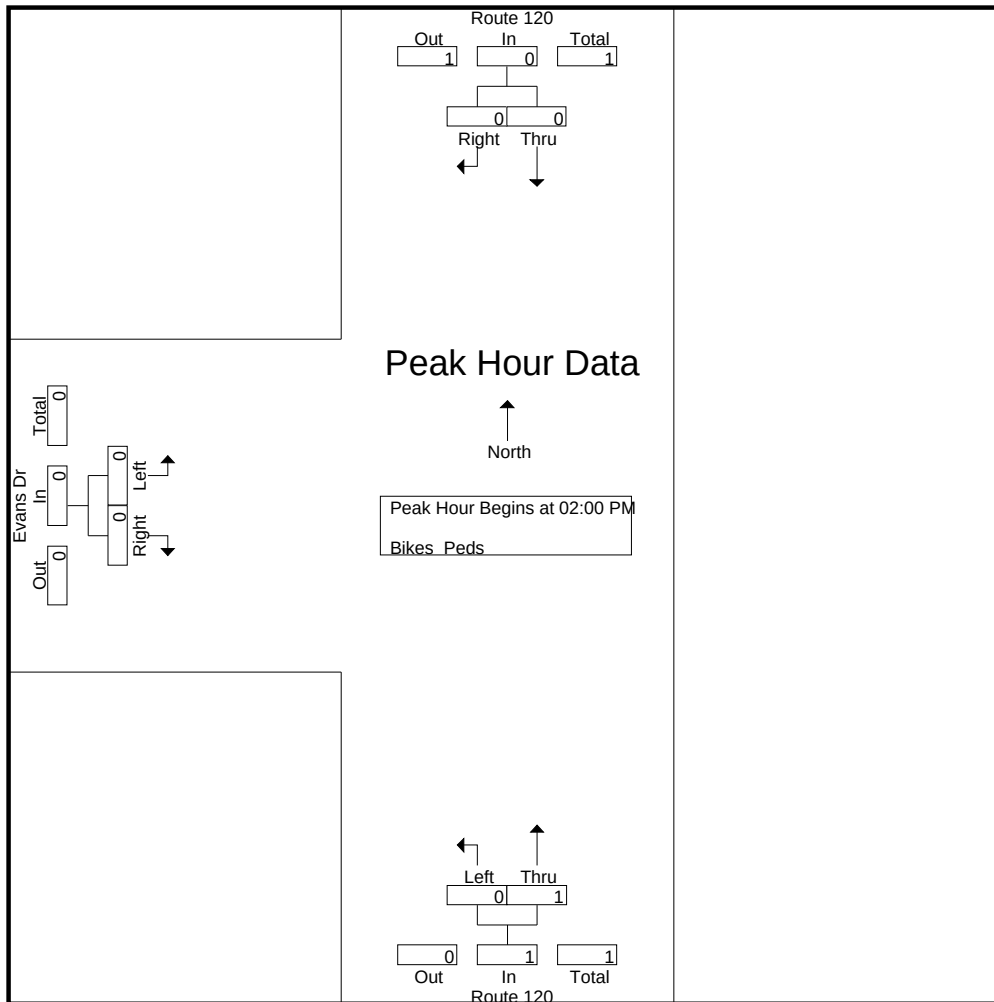
## Groups Printed- Bikes Peds

| Start Time  | Route 120<br>From North |       |      | Route 120<br>From South |      |      | Evans Dr<br>From West |       |      | Exclu. Total | Inclu. Total | Int. Total |
|-------------|-------------------------|-------|------|-------------------------|------|------|-----------------------|-------|------|--------------|--------------|------------|
|             | Thru                    | Right | Peds | Left                    | Thru | Peds | Left                  | Right | Peds |              |              |            |
| 02:00 PM    | 0                       | 0     | 0    | 0                       | 1    | 0    | 0                     | 0     | 0    | 0            | 1            | 1          |
| 02:15 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 02:30 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 02:45 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 1    | 0    | 0                     | 0     | 0    | 0            | 1            | 1          |
| 03:00 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 03:15 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 03:30 PM    | 0                       | 0     | 0    | 0                       | 1    | 0    | 0                     | 0     | 0    | 0            | 1            | 1          |
| 03:45 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 1    | 0    | 0                     | 0     | 0    | 0            | 1            | 1          |
| 04:00 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 04:15 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 04:30 PM    | 0                       | 0     | 0    | 0                       | 0    | 1    | 0                     | 0     | 0    | 1            | 0            | 1          |
| 04:45 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 1    | 0                     | 0     | 0    | 1            | 0            | 1          |
| 05:00 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 05:15 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 05:30 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| 05:45 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                     | 0     | 0    | 0            | 0            | 0          |
| Grand Total | 0                       | 0     | 0    | 0                       | 2    | 1    | 0                     | 0     | 0    | 1            | 2            | 3          |
| Apprch %    | 0                       | 0     |      | 0                       | 100  |      | 0                     | 0     |      |              |              |            |
| Total %     | 0                       | 0     |      | 0                       | 100  |      | 0                     | 0     |      | 33.3         | 66.7         |            |

|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Dr<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|-----------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                  | Right | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                       |       |            |            |
| Peak Hour for Entire Intersection Begins at 02:00 PM       |                         |       |            |                         |      |            |                       |       |            |            |
| 02:00 PM                                                   | 0                       | 0     | 0          | 0                       | 1    | 1          | 0                     | 0     | 0          | 1          |
| 02:15 PM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| 02:30 PM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| 02:45 PM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                     | 0     | 0          | 0          |
| Total Volume                                               | 0                       | 0     | 0          | 0                       | 1    | 1          | 0                     | 0     | 0          | 1          |
| % App. Total                                               | 0                       | 0     |            | 0                       | 100  |            | 0                     | 0     |            |            |
| PHF                                                        | .000                    | .000  | .000       | .000                    | .250 | .250       | .000                  | .000  | .000       | .250       |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 11

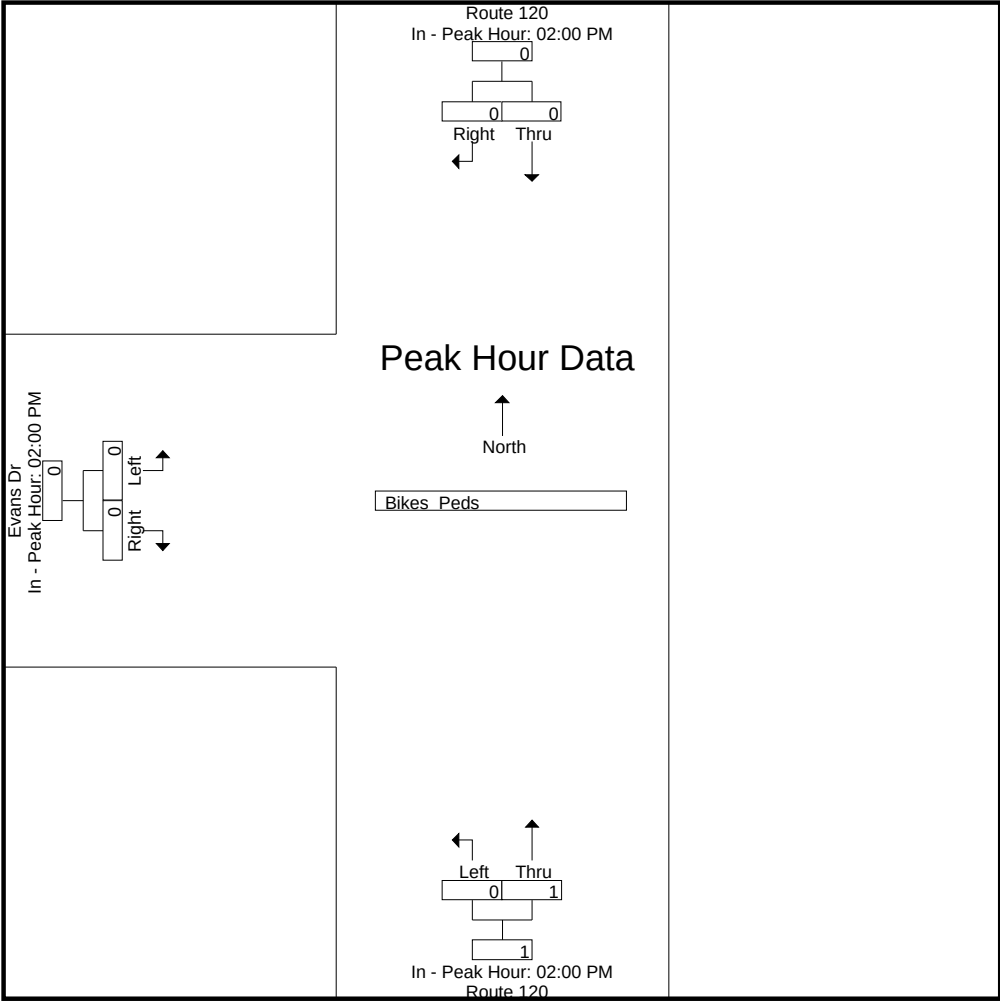


Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 02:00 PM |      |      | 02:00 PM |      |      | 02:00 PM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 1    | 1    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| Total Volume | 0        | 0    | 0    | 0        | 1    | 1    | 0        | 0    | 0    |
| % App. Total | 0        | 0    |      | 0        | 100  |      | 0        | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .250 | .250 | .000     | .000 | .000 |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 52933006  
Site Code : 52933006  
Start Date : 11/10/2022  
Page No : 12





# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 1

## Groups Printed- Cars - Trucks

|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Drive<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|--------------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                     | Right |  | Int. Total |
| 11:00 AM    | 183                     | 3     |  | 11                      | 133  |  | 7                        | 6     |  | 343        |
| 11:15 AM    | 155                     | 1     |  | 8                       | 161  |  | 2                        | 6     |  | 333        |
| 11:30 AM    | 160                     | 2     |  | 7                       | 164  |  | 0                        | 4     |  | 337        |
| 11:45 AM    | 157                     | 2     |  | 6                       | 149  |  | 0                        | 9     |  | 323        |
| Total       | 655                     | 8     |  | 32                      | 607  |  | 9                        | 25    |  | 1336       |
| 12:00 PM    | 165                     | 0     |  | 6                       | 168  |  | 1                        | 8     |  | 348        |
| 12:15 PM    | 155                     | 3     |  | 9                       | 150  |  | 3                        | 9     |  | 329        |
| 12:30 PM    | 157                     | 2     |  | 9                       | 160  |  | 3                        | 8     |  | 339        |
| 12:45 PM    | 144                     | 1     |  | 2                       | 125  |  | 1                        | 3     |  | 276        |
| Total       | 621                     | 6     |  | 26                      | 603  |  | 8                        | 28    |  | 1292       |
| Grand Total | 1276                    | 14    |  | 58                      | 1210 |  | 17                       | 53    |  | 2628       |
| Apprch %    | 98.9                    | 1.1   |  | 4.6                     | 95.4 |  | 24.3                     | 75.7  |  |            |
| Total %     | 48.6                    | 0.5   |  | 2.2                     | 46   |  | 0.6                      | 2     |  |            |
| Cars        | 1268                    | 14    |  | 58                      | 1205 |  | 17                       | 53    |  | 2615       |
| % Cars      | 99.4                    | 100   |  | 100                     | 99.6 |  | 100                      | 100   |  | 99.5       |
| Trucks      | 8                       | 0     |  | 0                       | 5    |  | 0                        | 0     |  | 13         |
| % Trucks    | 0.6                     | 0     |  | 0                       | 0.4  |  | 0                        | 0     |  | 0.5        |

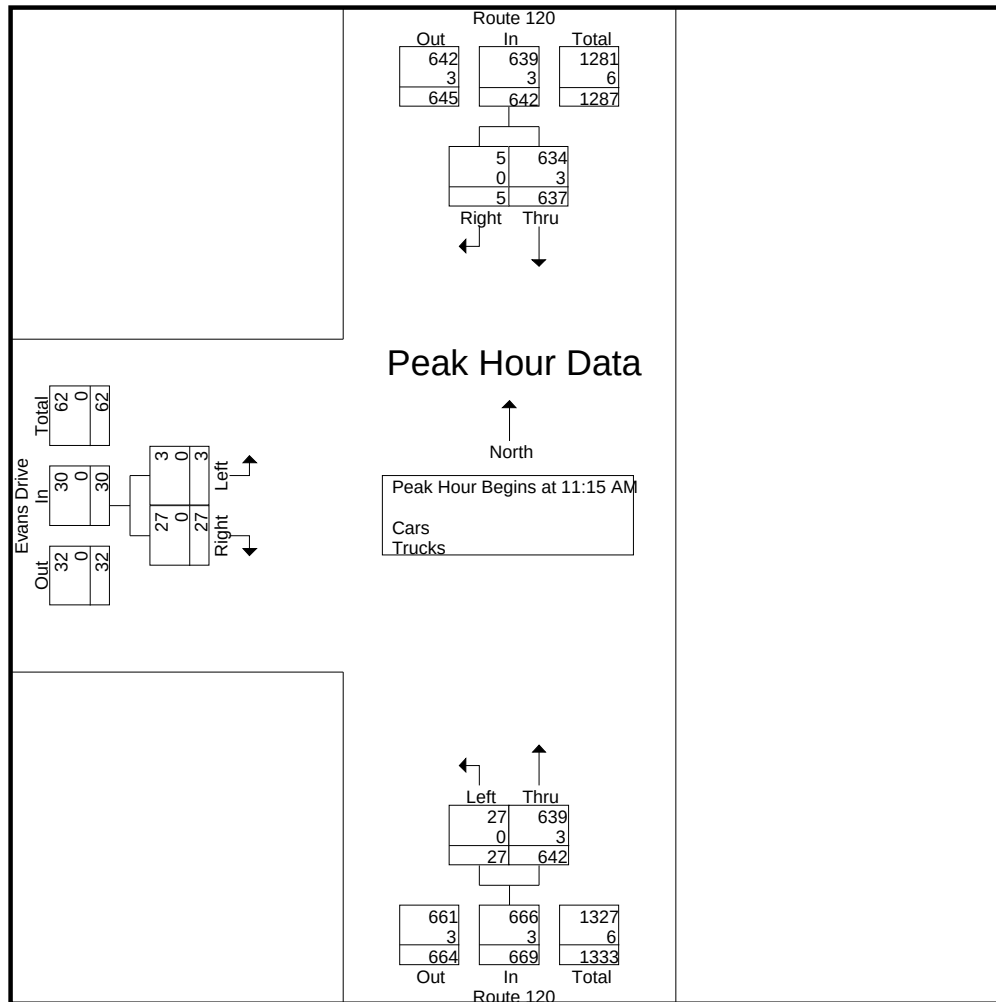
|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Drive<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                         |       |            |                         |      |            |                          |       |            |            |
| 11:15 AM                                                   | 155                     | 1     | 156        | 8                       | 161  | 169        | 2                        | 6     | 8          | 333        |
| 11:30 AM                                                   | 160                     | 2     | 162        | 7                       | 164  | 171        | 0                        | 4     | 4          | 337        |
| 11:45 AM                                                   | 157                     | 2     | 159        | 6                       | 149  | 155        | 0                        | 9     | 9          | 323        |
| 12:00 PM                                                   | 165                     | 0     | 165        | 6                       | 168  | 174        | 1                        | 8     | 9          | 348        |
| Total Volume                                               | 637                     | 5     | 642        | 27                      | 642  | 669        | 3                        | 27    | 30         | 1341       |
| % App. Total                                               | 99.2                    | 0.8   |            | 4                       | 96   |            | 10                       | 90    |            |            |
| PHF                                                        | .965                    | .625  | .973       | .844                    | .955 | .961       | .375                     | .750  | .833       | .963       |
| Cars                                                       | 634                     | 5     | 639        | 27                      | 639  | 666        | 3                        | 27    | 30         | 1335       |
| % Cars                                                     | 99.5                    | 100   | 99.5       | 100                     | 99.5 | 99.6       | 100                      | 100   | 100        | 99.6       |
| Trucks                                                     | 3                       | 0     | 3          | 0                       | 3    | 3          | 0                        | 0     | 0          | 6          |
| % Trucks                                                   | 0.5                     | 0     | 0.5        | 0                       | 0.5  | 0.4        | 0                        | 0     | 0          | 0.4        |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 2

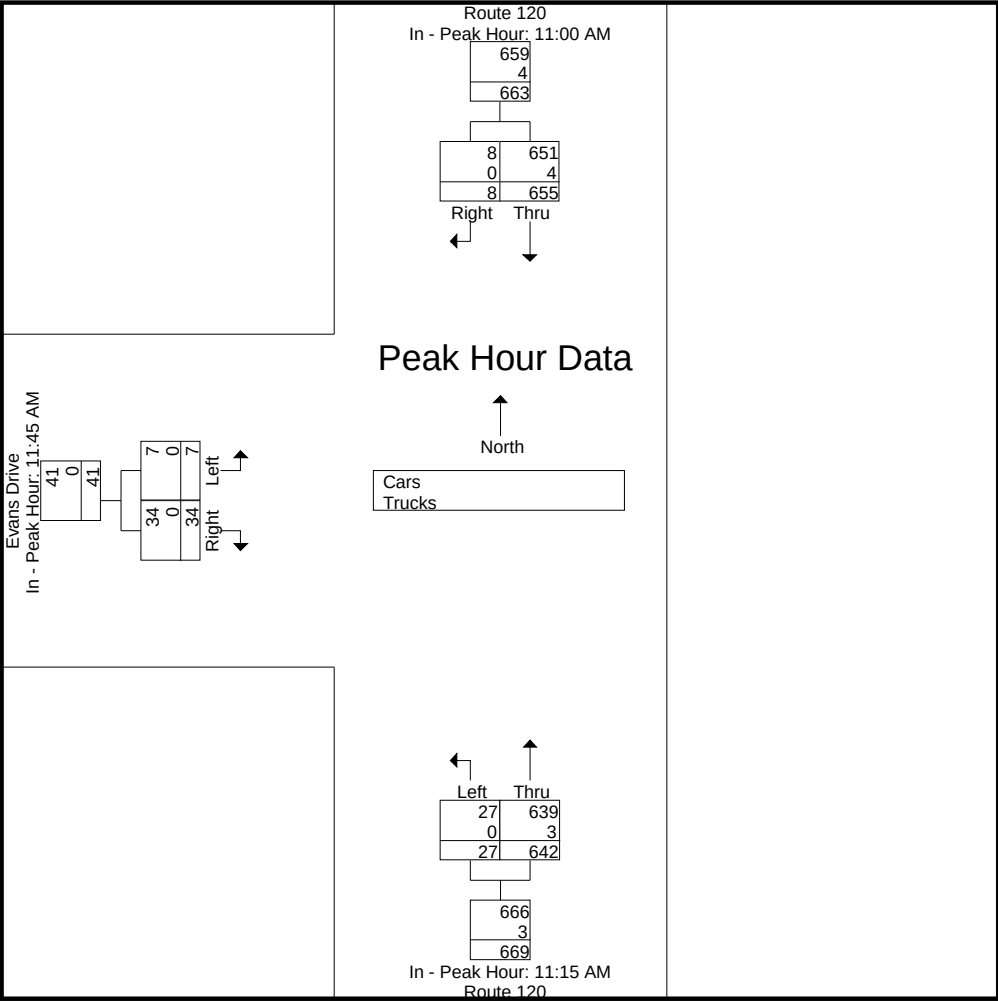


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:15 AM |      |      | 11:45 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 183      | 3    | 186  | 8        | 161  | 169  | 0        | 9    | 9    |
| +15 mins.    | 155      | 1    | 156  | 7        | 164  | 171  | 1        | 8    | 9    |
| +30 mins.    | 160      | 2    | 162  | 6        | 149  | 155  | 3        | 9    | 12   |
| +45 mins.    | 157      | 2    | 159  | 6        | 168  | 174  | 3        | 8    | 11   |
| Total Volume | 655      | 8    | 663  | 27       | 642  | 669  | 7        | 34   | 41   |
| % App. Total | 98.8     | 1.2  |      | 4        | 96   |      | 17.1     | 82.9 |      |
| PHF          | .895     | .667 | .891 | .844     | .955 | .961 | .583     | .944 | .854 |
| Cars         | 651      | 8    | 659  | 27       | 639  | 666  | 7        | 34   | 41   |
| % Cars       | 99.4     | 100  | 99.4 | 100      | 99.5 | 99.6 | 100      | 100  | 100  |
| Trucks       | 4        | 0    | 4    | 0        | 3    | 3    | 0        | 0    | 0    |
| % Trucks     | 0.6      | 0    | 0.6  | 0        | 0.5  | 0.4  | 0        | 0    | 0    |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 3



# Accurate Counts

978-664-2565

N/S Street : Route 120  
 E/W Street : Evans Drive  
 City/State : Lebanon, NH  
 Weather : Clear

File Name : 529330S6  
 Site Code : 52933006  
 Start Date : 11/12/2022  
 Page No : 4

## Groups Printed- Cars

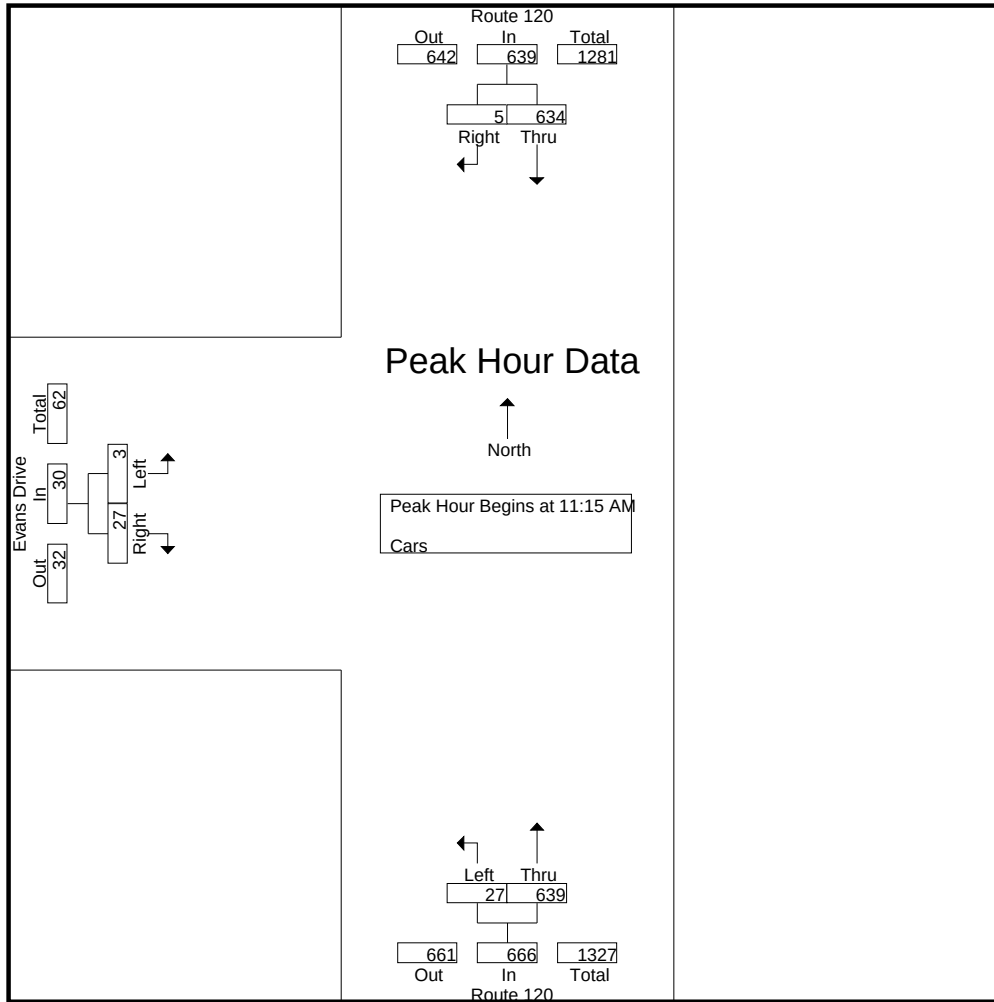
|             | Route 120<br>From North |       |  | Route 120<br>From South |      |  | Evans Drive<br>From West |       |  |            |
|-------------|-------------------------|-------|--|-------------------------|------|--|--------------------------|-------|--|------------|
| Start Time  | Thru                    | Right |  | Left                    | Thru |  | Left                     | Right |  | Int. Total |
| 11:00 AM    | 181                     | 3     |  | 11                      | 133  |  | 7                        | 6     |  | 341        |
| 11:15 AM    | 153                     | 1     |  | 8                       | 160  |  | 2                        | 6     |  | 330        |
| 11:30 AM    | 160                     | 2     |  | 7                       | 163  |  | 0                        | 4     |  | 336        |
| 11:45 AM    | 157                     | 2     |  | 6                       | 148  |  | 0                        | 9     |  | 322        |
| Total       | 651                     | 8     |  | 32                      | 604  |  | 9                        | 25    |  | 1329       |
| 12:00 PM    | 164                     | 0     |  | 6                       | 168  |  | 1                        | 8     |  | 347        |
| 12:15 PM    | 154                     | 3     |  | 9                       | 148  |  | 3                        | 9     |  | 326        |
| 12:30 PM    | 156                     | 2     |  | 9                       | 160  |  | 3                        | 8     |  | 338        |
| 12:45 PM    | 143                     | 1     |  | 2                       | 125  |  | 1                        | 3     |  | 275        |
| Total       | 617                     | 6     |  | 26                      | 601  |  | 8                        | 28    |  | 1286       |
| Grand Total | 1268                    | 14    |  | 58                      | 1205 |  | 17                       | 53    |  | 2615       |
| Apprch %    | 98.9                    | 1.1   |  | 4.6                     | 95.4 |  | 24.3                     | 75.7  |  |            |
| Total %     | 48.5                    | 0.5   |  | 2.2                     | 46.1 |  | 0.7                      | 2     |  |            |

|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Drive<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:15 AM       |                         |       |            |                         |      |            |                          |       |            |            |
| 11:15 AM                                                   | 153                     | 1     | 154        | 8                       | 160  | 168        | 2                        | 6     | 8          | 330        |
| 11:30 AM                                                   | 160                     | 2     | 162        | 7                       | 163  | 170        | 0                        | 4     | 4          | 336        |
| 11:45 AM                                                   | 157                     | 2     | 159        | 6                       | 148  | 154        | 0                        | 9     | 9          | 322        |
| 12:00 PM                                                   | 164                     | 0     | 164        | 6                       | 168  | 174        | 1                        | 8     | 9          | 347        |
| Total Volume                                               | 634                     | 5     | 639        | 27                      | 639  | 666        | 3                        | 27    | 30         | 1335       |
| % App. Total                                               | 99.2                    | 0.8   |            | 4.1                     | 95.9 |            | 10                       | 90    |            |            |
| PHF                                                        | .966                    | .625  | .974       | .844                    | .951 | .957       | .375                     | .750  | .833       | .962       |



N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 5

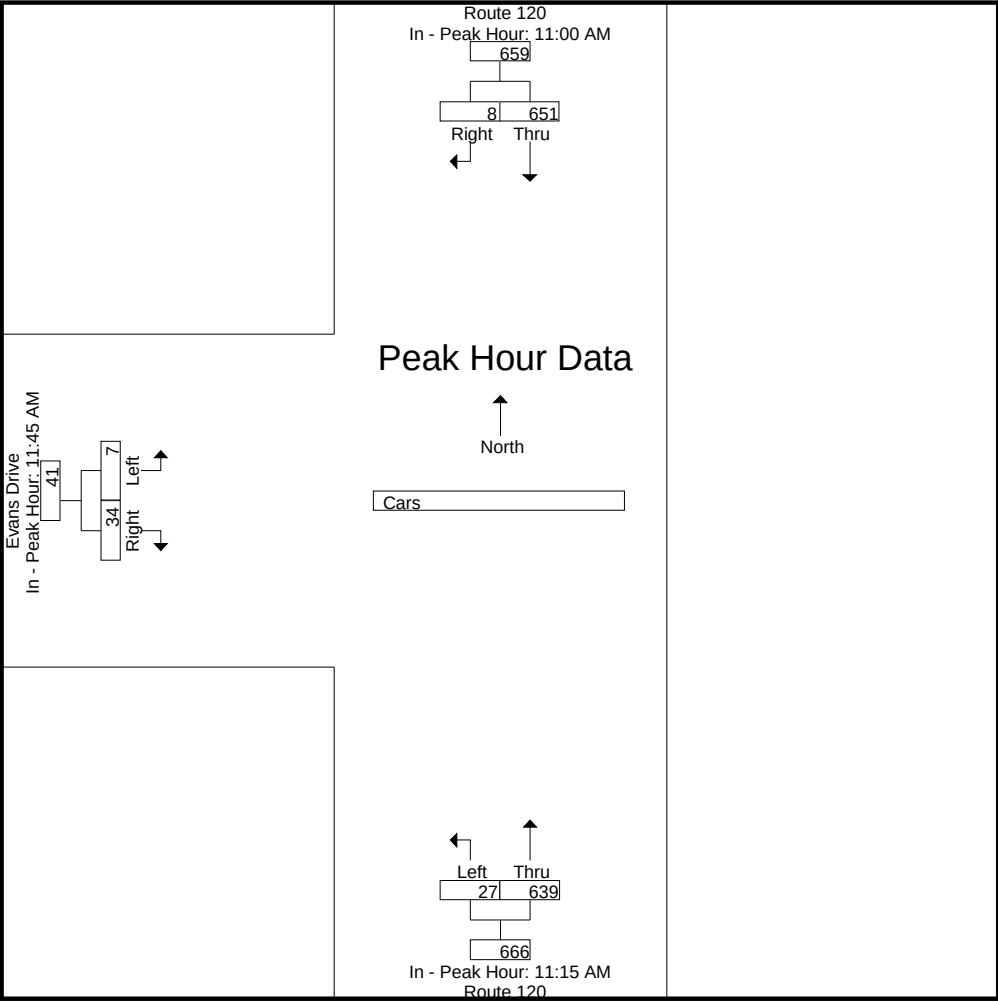


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM   |          |            | 11:15 AM |            |            | 11:45 AM |          |           |
|--------------|------------|----------|------------|----------|------------|------------|----------|----------|-----------|
| +0 mins.     | <b>181</b> | <b>3</b> | <b>184</b> | <b>8</b> | 160        | 168        | 0        | <b>9</b> | 9         |
| +15 mins.    | 153        | 1        | 154        | 7        | 163        | 170        | 1        | 8        | 9         |
| +30 mins.    | 160        | 2        | 162        | 6        | 148        | 154        | <b>3</b> | 9        | <b>12</b> |
| +45 mins.    | 157        | 2        | 159        | 6        | <b>168</b> | <b>174</b> | 3        | 8        | 11        |
| Total Volume | 651        | 8        | 659        | 27       | 639        | 666        | 7        | 34       | 41        |
| % App. Total | 98.8       | 1.2      |            | 4.1      | 95.9       |            | 17.1     | 82.9     |           |
| PHF          | .899       | .667     | .895       | .844     | .951       | .957       | .583     | .944     | .854      |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 6



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 7

## Groups Printed- Trucks

|             | Route 120<br>From North |       | Route 120<br>From South |      | Evans Drive<br>From West |       |            |
|-------------|-------------------------|-------|-------------------------|------|--------------------------|-------|------------|
| Start Time  | Thru                    | Right | Left                    | Thru | Left                     | Right | Int. Total |
| 11:00 AM    | 2                       | 0     | 0                       | 0    | 0                        | 0     | 2          |
| 11:15 AM    | 2                       | 0     | 0                       | 1    | 0                        | 0     | 3          |
| 11:30 AM    | 0                       | 0     | 0                       | 1    | 0                        | 0     | 1          |
| 11:45 AM    | 0                       | 0     | 0                       | 1    | 0                        | 0     | 1          |
| Total       | 4                       | 0     | 0                       | 3    | 0                        | 0     | 7          |
| 12:00 PM    | 1                       | 0     | 0                       | 0    | 0                        | 0     | 1          |
| 12:15 PM    | 1                       | 0     | 0                       | 2    | 0                        | 0     | 3          |
| 12:30 PM    | 1                       | 0     | 0                       | 0    | 0                        | 0     | 1          |
| 12:45 PM    | 1                       | 0     | 0                       | 0    | 0                        | 0     | 1          |
| Total       | 4                       | 0     | 0                       | 2    | 0                        | 0     | 6          |
| Grand Total | 8                       | 0     | 0                       | 5    | 0                        | 0     | 13         |
| Apprch %    | 100                     | 0     | 0                       | 100  | 0                        | 0     |            |
| Total %     | 61.5                    | 0     | 0                       | 38.5 | 0                        | 0     |            |

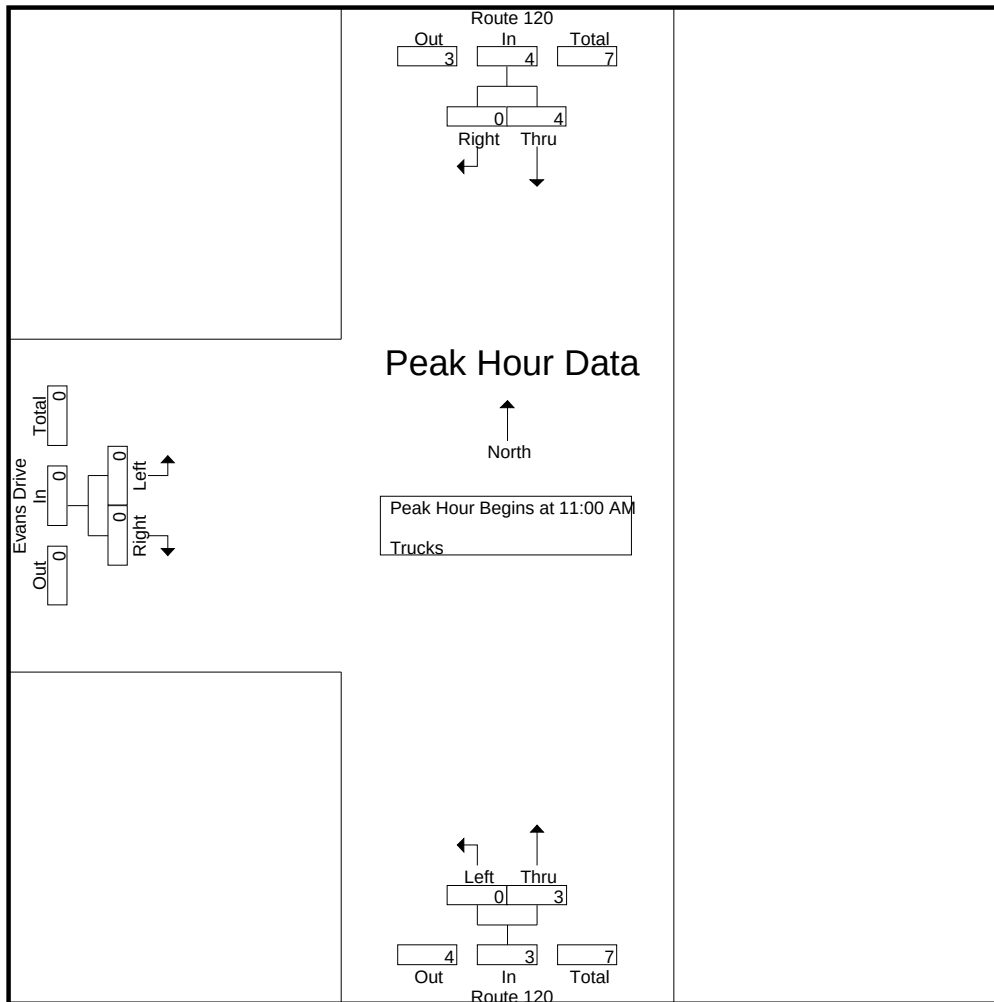
|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Drive<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |       |            |                         |      |            |                          |       |            |            |
| 11:00 AM                                                   | 2                       | 0     | 2          | 0                       | 0    | 0          | 0                        | 0     | 0          | 2          |
| 11:15 AM                                                   | 2                       | 0     | 2          | 0                       | 1    | 1          | 0                        | 0     | 0          | 3          |
| 11:30 AM                                                   | 0                       | 0     | 0          | 0                       | 1    | 1          | 0                        | 0     | 0          | 1          |
| 11:45 AM                                                   | 0                       | 0     | 0          | 0                       | 1    | 1          | 0                        | 0     | 0          | 1          |
| Total Volume                                               | 4                       | 0     | 4          | 0                       | 3    | 3          | 0                        | 0     | 0          | 7          |
| % App. Total                                               | 100                     | 0     |            | 0                       | 100  |            | 0                        | 0     |            |            |
| PHF                                                        | .500                    | .000  | .500       | .000                    | .750 | .750       | .000                     | .000  | .000       | .583       |

# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 8



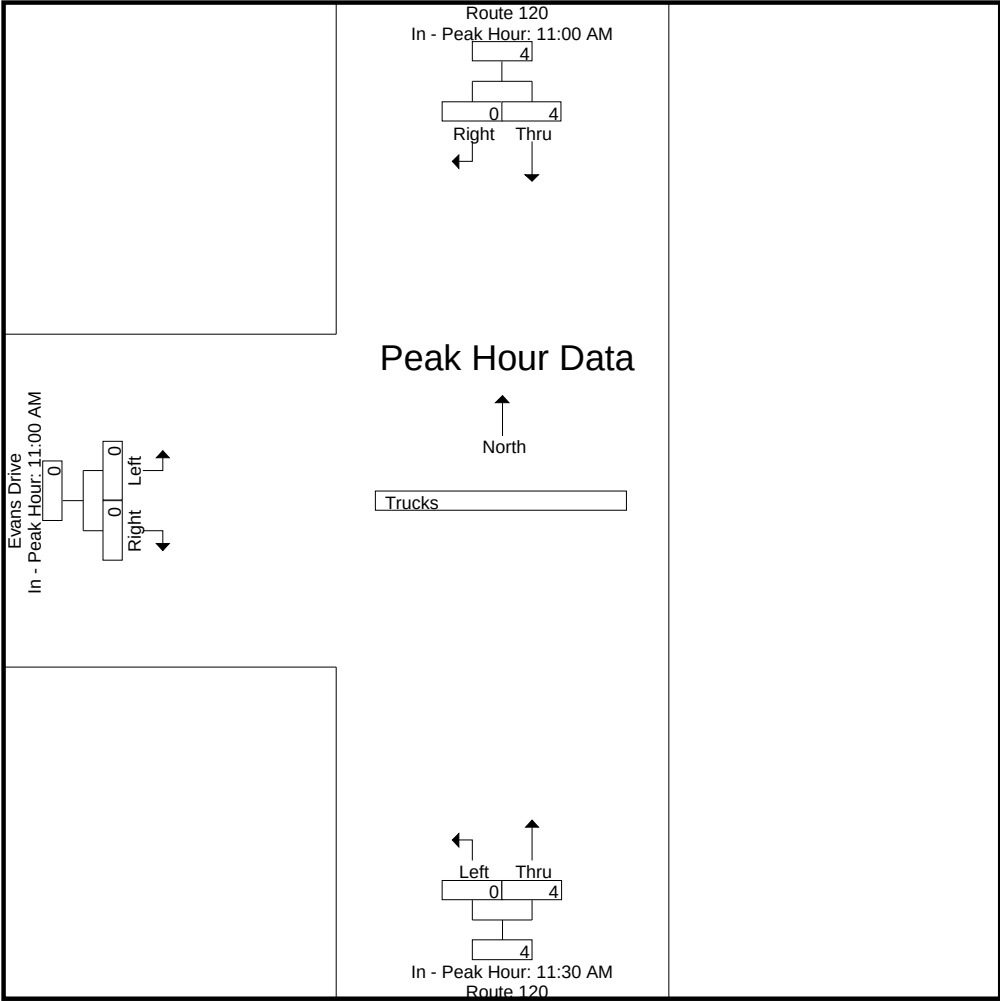
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:30 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 2        | 0    | 2    | 0        | 1    | 1    | 0        | 0    | 0    |
| +15 mins.    | 2        | 0    | 2    | 0        | 1    | 1    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 2    | 2    | 0        | 0    | 0    |
| Total Volume | 4        | 0    | 4    | 0        | 4    | 4    | 0        | 0    | 0    |
| % App. Total | 100      | 0    |      | 0        | 100  |      | 0        | 0    |      |
| PHF          | .500     | .000 | .500 | .000     | .500 | .500 | .000     | .000 | .000 |



N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 9



# Accurate Counts

978-664-2565

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 10

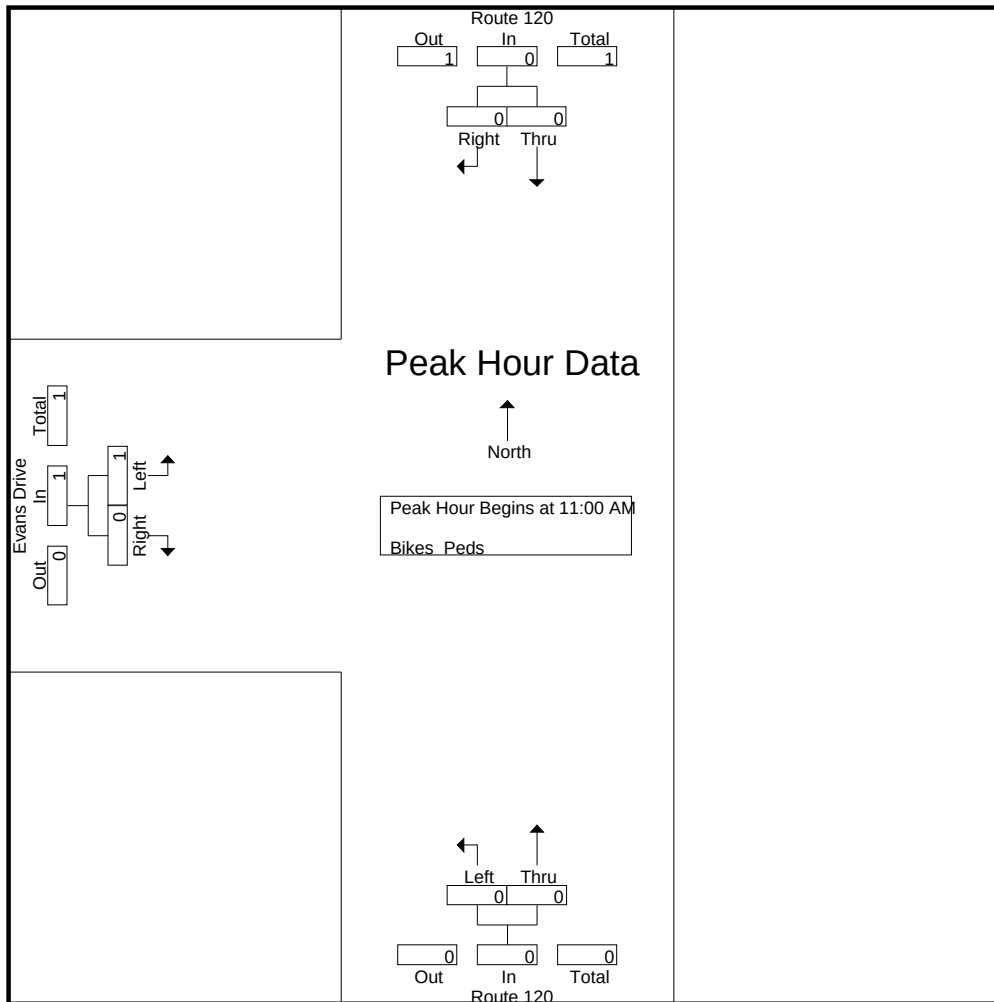
## Groups Printed- Bikes Peds

|             | Route 120<br>From North |       |      | Route 120<br>From South |      |      | Evans Drive<br>From West |       |      |              |              |            |
|-------------|-------------------------|-------|------|-------------------------|------|------|--------------------------|-------|------|--------------|--------------|------------|
| Start Time  | Thru                    | Right | Peds | Left                    | Thru | Peds | Left                     | Right | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 11:00 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 11:15 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 11:30 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 11:45 AM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 1                        | 0     | 0    | 0            | 1            | 1          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 0    | 1                        | 0     | 0    | 0            | 1            | 1          |
| 12:00 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 12:15 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 12:30 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| 12:45 PM    | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Total       | 0                       | 0     | 0    | 0                       | 0    | 0    | 0                        | 0     | 0    | 0            | 0            | 0          |
| Grand Total | 0                       | 0     | 0    | 0                       | 0    | 0    | 1                        | 0     | 0    | 0            | 1            | 1          |
| Apprch %    | 0                       | 0     |      | 0                       | 0    |      | 100                      | 0     |      |              |              |            |
| Total %     | 0                       | 0     |      | 0                       | 0    |      | 100                      | 0     |      | 0            | 100          |            |

|                                                            | Route 120<br>From North |       |            | Route 120<br>From South |      |            | Evans Drive<br>From West |       |            |            |
|------------------------------------------------------------|-------------------------|-------|------------|-------------------------|------|------------|--------------------------|-------|------------|------------|
| Start Time                                                 | Thru                    | Right | App. Total | Left                    | Thru | App. Total | Left                     | Right | App. Total | Int. Total |
| Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1 |                         |       |            |                         |      |            |                          |       |            |            |
| Peak Hour for Entire Intersection Begins at 11:00 AM       |                         |       |            |                         |      |            |                          |       |            |            |
| 11:00 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                        | 0     | 0          | 0          |
| 11:15 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                        | 0     | 0          | 0          |
| 11:30 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 0                        | 0     | 0          | 0          |
| 11:45 AM                                                   | 0                       | 0     | 0          | 0                       | 0    | 0          | 1                        | 0     | 1          | 1          |
| Total Volume                                               | 0                       | 0     | 0          | 0                       | 0    | 0          | 1                        | 0     | 1          | 1          |
| % App. Total                                               | 0                       | 0     |            | 0                       | 0    |            | 100                      | 0     |            |            |
| PHF                                                        | .000                    | .000  | .000       | .000                    | .000 | .000       | .250                     | .000  | .250       | .250       |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 11

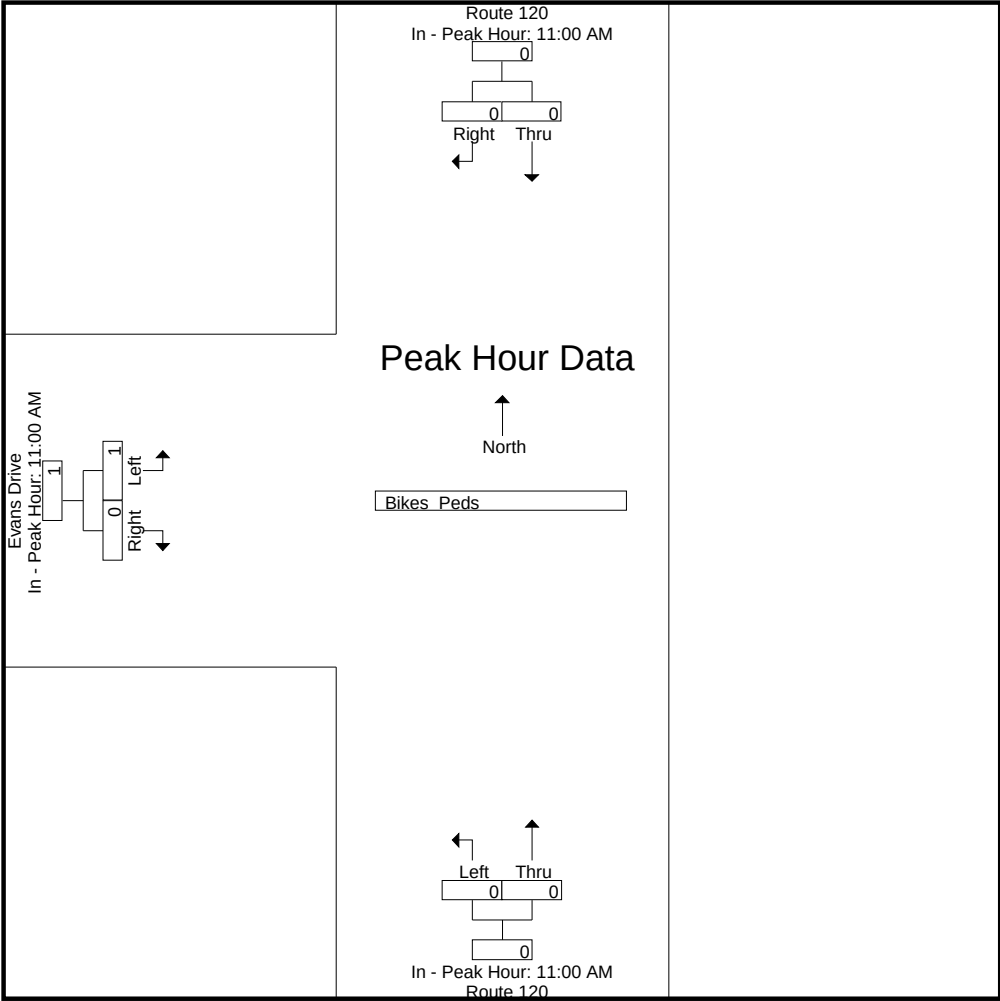


Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

|              | 11:00 AM |      |      | 11:00 AM |      |      | 11:00 AM |      |      |
|--------------|----------|------|------|----------|------|------|----------|------|------|
| +0 mins.     | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +15 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +30 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 0        | 0    | 0    |
| +45 mins.    | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 0    | 1    |
| Total Volume | 0        | 0    | 0    | 0        | 0    | 0    | 1        | 0    | 1    |
| % App. Total | 0        | 0    |      | 0        | 0    |      | 100      | 0    |      |
| PHF          | .000     | .000 | .000 | .000     | .000 | .000 | .250     | .000 | .250 |

N/S Street : Route 120  
E/W Street : Evans Drive  
City/State : Lebanon, NH  
Weather : Clear

File Name : 529330S6  
Site Code : 52933006  
Start Date : 11/12/2022  
Page No : 12





## Traffic-Volume Adjustment Data

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# Year 2019 Monthly Data

Town: Lebanon  
 Station: 02253025  
 Location: NH 120 1 mile south of Hanover TL (south of Lahaye Dr)  
 Group: 4

| <u>Month</u> | <u>ADT</u> | <u>Adjustment<br/>to Average</u> | <u>Adjustment<br/>to Peak</u> |
|--------------|------------|----------------------------------|-------------------------------|
| January      | 19,419     | 1.04                             | 1.14                          |
| February     | 19,789     | 1.02                             | 1.12                          |
| March        | 19,597     | 1.03                             | 1.13                          |
| April        | 20,616     | 0.98                             | 1.07                          |
| May          | 20,764     | 0.97                             | 1.07                          |
| June         | 20,272     | 0.99                             | 1.09                          |
| July         | 20,301     | 0.99                             | 1.09                          |
| August       | 20,252     | 0.99                             | 1.09                          |
| September    | 20,293     | 0.99                             | 1.09                          |
| October      | 22,157     | 0.91                             | 1.00                          |
| November     | 19,544     | 1.03                             | 1.13                          |
| December     | 18,300     | 1.10                             | 1.21                          |
| AADT:        | 20,106     |                                  |                               |
| Peak Month:  | 22,157     |                                  |                               |

| LOCATION INFO |                                                                      |
|---------------|----------------------------------------------------------------------|
| Location ID   | 02253025                                                             |
| Type          | SPOT                                                                 |
| Funct'l Class | 4                                                                    |
| Located On    | NH Route 120                                                         |
| Loc On Alias  | NH 120 1 MILE SOUTH OF<br>HANOVER TL (SB-NB) (01253114-<br>01253115) |
| Direction     | 2-WAY                                                                |

|           |                   |
|-----------|-------------------|
| County    | GRAFTON           |
| Community | LEBANON           |
| MPO ID    |                   |
| HPMS ID   |                   |
| Agency    | New Hampshire DOT |

**Weekday AM Peak:**

$$2,322/1,790 = x 1.297$$

**School PM Peak:**

$$1,556/1,476 = x 1.054$$

**Weekday PM Peak:**

$$2,065/1,734 = x 1.191$$

**Weekday Daily:**

$$23,322/20,340 = x 1.147$$

| INTERVAL:15-MIN |                 |     |     |     |              |        |
|-----------------|-----------------|-----|-----|-----|--------------|--------|
| Time            | 15-min Interval |     |     |     | Hourly Count | % Diff |
|                 | 1st             | 2nd | 3rd | 4th |              |        |
| 0:00-1:00       | 16              | 20  | 15  | 9   | 60           | 0.0    |
| 1:00-2:00       | 8               | 12  | 8   | 8   | 36           | -22.2  |
| 2:00-3:00       | 9               | 8   | 9   | 10  | 36           | -24.4  |
| 3:00-4:00       | 8               | 11  | 12  | 12  | 43           | -2.3   |
| 4:00-5:00       | 14              | 26  | 42  | 40  | 122          | -21.9  |
| 5:00-6:00       | 53              | 83  | 135 | 161 | 432          | -18.1  |
| 6:00-7:00       | 238             | 319 | 419 | 327 | 1303         | -15.3  |
| 7:00-8:00       | 352             | 450 | 534 | 454 | 1790         | -12.4  |
| 8:00-9:00       | 396             | 372 | 359 | 322 | 1449         | -5.2   |
| 9:00-10:00      | 297             | 294 | 325 | 302 | 1218         | -9.8   |
| 10:00-11:00     | 300             | 294 | 304 | 295 | 1193         | -9.3   |
| 11:00-12:00     | 299             | 290 | 324 | 322 | 1235         | -6.0   |
| 12:00-13:00     | 342             | 336 | 335 | 315 | 1328         | -3.3   |
| 13:00-14:00     | 318             | 306 | 337 | 325 | 1286         | -13.1  |
| 14:00-15:00     | 345             | 360 | 400 | 371 | 1476         | -8.2   |
| 15:00-16:00     | 393             | 405 | 433 | 407 | 1638         | -12.2  |
| 16:00-17:00     | 436             | 407 | 459 | 432 | 1734         | -18.4  |
| 17:00-18:00     | 487             | 389 | 330 | 263 | 1469         | -11.3  |
| 18:00-19:00     | 247             | 250 | 241 | 173 | 911          | -6.5   |
| 19:00-20:00     | 172             | 182 | 170 | 130 | 654          | -13.3  |
| 20:00-21:00     | 114             | 95  | 86  | 73  | 368          | -10.3  |
| 21:00-22:00     | 83              | 73  | 59  | 46  | 261          | -4.9   |
| 22:00-23:00     | 42              | 46  | 42  | 34  | 164          | -17.8  |
| 23:00-24:00     | 39              | 38  | 35  | 22  | 134          | 29.1   |
| Total           | Counts = 22     |     |     |     | 20340        | -10.6  |

**Count Criteria**

|                  |                                             |
|------------------|---------------------------------------------|
| Local Id         | 02253025                                    |
| Start Date       | 11/01/2022                                  |
| End Date         | 11/30/2022                                  |
| Aggregation      | AVG                                         |
| Include Abnormal | False                                       |
| Selected Days    | Monday Tuesday Wednesday<br>Thursday Friday |

| INTERVAL:60-MIN |                 |     |     |     |              |        |
|-----------------|-----------------|-----|-----|-----|--------------|--------|
| Time            | 60-min Interval |     |     |     | Hourly Count | % Diff |
|                 | 1st             | 2nd | 3rd | 4th |              |        |
| 0:00-1:00       | -               | -   | -   | -   | 68           | 12.5   |
| 1:00-2:00       | -               | -   | -   | -   | 45           | 0.0    |
| 2:00-3:00       | -               | -   | -   | -   | 40           | -14.0  |
| 3:00-4:00       | -               | -   | -   | -   | 47           | 6.6    |
| 4:00-5:00       | -               | -   | -   | -   | 123          | -21.1  |
| 5:00-6:00       | -               | -   | -   | -   | 413          | -22.6  |
| 6:00-7:00       | -               | -   | -   | -   | 1397         | -8.4   |
| 7:00-8:00       | -               | -   | -   | -   | 2322         | 13.6   |
| 8:00-9:00       | -               | -   | -   | -   | 1784         | 15.6   |
| 9:00-10:00      | -               | -   | -   | -   | 1339         | -0.3   |
| 10:00-11:00     | -               | -   | -   | -   | 1281         | -2.2   |
| 11:00-12:00     | -               | -   | -   | -   | 1359         | 3.5    |
| 12:00-13:00     | -               | -   | -   | -   | 1493         | 8.4    |
| 13:00-14:00     | -               | -   | -   | -   | 1405         | -4.3   |
| 14:00-15:00     | -               | -   | -   | -   | 1556         | -3.0   |
| 15:00-16:00     | -               | -   | -   | -   | 1759         | -5.0   |
| 16:00-17:00     | -               | -   | -   | -   | 2065         | -1.0   |
| 17:00-18:00     | -               | -   | -   | -   | 1772         | 7.4    |
| 18:00-19:00     | -               | -   | -   | -   | 1096         | 12.0   |
| 19:00-20:00     | -               | -   | -   | -   | 744          | -0.4   |
| 20:00-21:00     | -               | -   | -   | -   | 475          | 15.2   |
| 21:00-22:00     | -               | -   | -   | -   | 328          | 17.9   |
| 22:00-23:00     | -               | -   | -   | -   | 225          | 13.8   |
| 23:00-24:00     | -               | -   | -   | -   | 186          | 60.1   |
| Total           | Counts = 21     |     |     |     | 23322        | 3.1    |

**Count Criteria**

|                  |                                             |
|------------------|---------------------------------------------|
| Local Id         | 02253025                                    |
| Start Date       | 11/01/2019                                  |
| End Date         | 11/30/2019                                  |
| Aggregation      | AVG                                         |
| Include Abnormal | False                                       |
| Selected Days    | Monday Tuesday Wednesday<br>Thursday Friday |



| LOCATION INFO |                                                               |           |                   |
|---------------|---------------------------------------------------------------|-----------|-------------------|
| Location ID   | 02253025                                                      | County    | GRAFTON           |
| Type          | SPOT                                                          | Community | LEBANON           |
| Funct'l Class | 4                                                             | MPO ID    |                   |
| Located On    | NH Route 120                                                  | HPMS ID   |                   |
| Loc On Alias  | NH 120 1 MILE SOUTH OF HANOVER TL (SB-NB) (01253114-01253115) | Agency    | New Hampshire DOT |
| Direction     | 2-WAY                                                         |           |                   |

Saturday Peak:

908/855 = x 1.062

Saturday Daily:

11,815/10,657 = x 1.109

| INTERVAL:15-MIN |                 |     |     |     |              |        |
|-----------------|-----------------|-----|-----|-----|--------------|--------|
| Time            | 15-min Interval |     |     |     | Hourly Count | % Diff |
|                 | 1st             | 2nd | 3rd | 4th |              |        |
| 0:00-1:00       | 23              | 25  | 17  | 12  | 77           | 24.8   |
| 1:00-2:00       | 12              | 15  | 9   | 8   | 44           | -2.2   |
| 2:00-3:00       | 9               | 5   | 9   | 9   | 32           | -35.9  |
| 3:00-4:00       | 5               | 8   | 8   | 10  | 31           | -34.7  |
| 4:00-5:00       | 11              | 13  | 24  | 16  | 64           | -81.5  |
| 5:00-6:00       | 20              | 37  | 53  | 49  | 159          | -106.1 |
| 6:00-7:00       | 79              | 114 | 150 | 93  | 436          | -110.8 |
| 7:00-8:00       | 99              | 116 | 139 | 118 | 472          | -124.4 |
| 8:00-9:00       | 110             | 108 | 142 | 123 | 483          | -103.8 |
| 9:00-10:00      | 111             | 134 | 154 | 165 | 564          | -81.7  |
| 10:00-11:00     | 178             | 193 | 187 | 188 | 746          | -54.9  |
| 11:00-12:00     | 206             | 208 | 204 | 217 | 835          | -44.4  |
| 12:00-13:00     | 221             | 208 | 228 | 198 | 855          | -46.5  |
| 13:00-14:00     | 196             | 195 | 209 | 188 | 788          | -60.2  |
| 14:00-15:00     | 201             | 184 | 216 | 206 | 807          | -66.1  |
| 15:00-16:00     | 186             | 185 | 197 | 187 | 755          | -84.1  |
| 16:00-17:00     | 199             | 184 | 195 | 189 | 767          | -92.4  |
| 17:00-18:00     | 190             | 164 | 158 | 161 | 673          | -83.9  |
| 18:00-19:00     | 163             | 179 | 187 | 133 | 662          | -37.9  |
| 19:00-20:00     | 147             | 167 | 157 | 107 | 578          | -25.5  |
| 20:00-21:00     | 87              | 73  | 74  | 74  | 308          | -27.9  |
| 21:00-22:00     | 71              | 61  | 60  | 54  | 246          | -10.8  |
| 22:00-23:00     | 42              | 47  | 36  | 33  | 158          | -21.5  |
| 23:00-24:00     | 38              | 30  | 28  | 21  | 117          | 15.7   |
| Total           | Counts = 4      |     |     |     | 10657        | -71.9  |

#### Count Criteria

|                  |            |
|------------------|------------|
| Local Id         | 02253025   |
| Start Date       | 11/01/2022 |
| End Date         | 11/30/2022 |
| Aggregation      | AVG        |
| Include Abnormal | False      |
| Selected Days    | Saturday   |

| INTERVAL:60-MIN |                 |     |     |     |              |        |
|-----------------|-----------------|-----|-----|-----|--------------|--------|
| Time            | 60-min Interval |     |     |     | Hourly Count | % Diff |
|                 | 1st             | 2nd | 3rd | 4th |              |        |
| 0:00-1:00       | -               | -   | -   | -   | 80           | 28.6   |
| 1:00-2:00       | -               | -   | -   | -   | 68           | 40.7   |
| 2:00-3:00       | -               | -   | -   | -   | 43           | -6.7   |
| 3:00-4:00       | -               | -   | -   | -   | 33           | -28.6  |
| 4:00-5:00       | -               | -   | -   | -   | 59           | -88.2  |
| 5:00-6:00       | -               | -   | -   | -   | 128          | -120.7 |
| 6:00-7:00       | -               | -   | -   | -   | 441          | -110.0 |
| 7:00-8:00       | -               | -   | -   | -   | 541          | -115.7 |
| 8:00-9:00       | -               | -   | -   | -   | 564          | -92.1  |
| 9:00-10:00      | -               | -   | -   | -   | 670          | -66.9  |
| 10:00-11:00     | -               | -   | -   | -   | 821          | -45.9  |
| 11:00-12:00     | -               | -   | -   | -   | 908          | -36.4  |
| 12:00-13:00     | -               | -   | -   | -   | 901          | -41.5  |
| 13:00-14:00     | -               | -   | -   | -   | 861          | -52.1  |
| 14:00-15:00     | -               | -   | -   | -   | 850          | -61.4  |
| 15:00-16:00     | -               | -   | -   | -   | 857          | -73.4  |
| 16:00-17:00     | -               | -   | -   | -   | 824          | -86.7  |
| 17:00-18:00     | -               | -   | -   | -   | 752          | -74.5  |
| 18:00-19:00     | -               | -   | -   | -   | 738          | -27.4  |
| 19:00-20:00     | -               | -   | -   | -   | 603          | -21.3  |
| 20:00-21:00     | -               | -   | -   | -   | 358          | -13.1  |
| 21:00-22:00     | -               | -   | -   | -   | 358          | 26.6   |
| 22:00-23:00     | -               | -   | -   | -   | 211          | 7.4    |
| 23:00-24:00     | -               | -   | -   | -   | 146          | 37.4   |
| Total           | Counts = 5      |     |     |     | 11815        | -62.8  |

#### Count Criteria

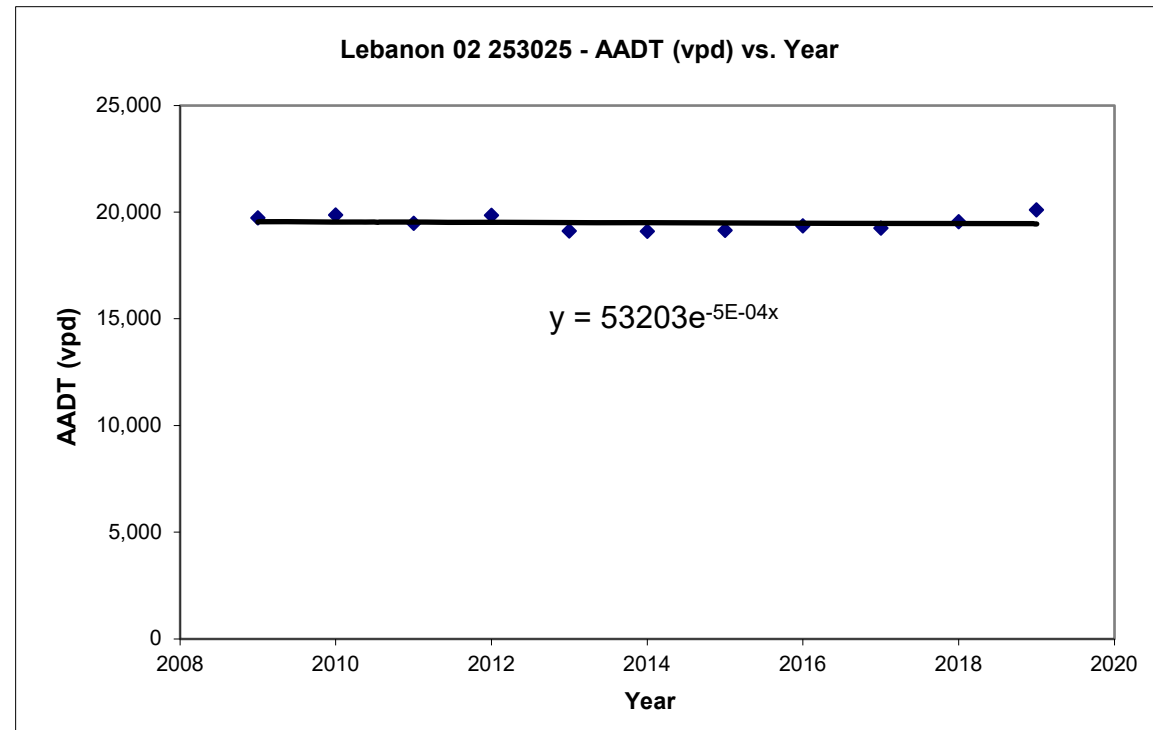
|                  |            |
|------------------|------------|
| Local Id         | 02253025   |
| Start Date       | 11/01/2019 |
| End Date         | 11/30/2019 |
| Aggregation      | AVG        |
| Include Abnormal | False      |
| Selected Days    | Saturday   |

Station 02253025  
 Lebanon - NH 120 South of Hanover TL  
 Group 4  
 Region C  
 FC 16

# AADT Annual Change

|      |       |        |
|------|-------|--------|
| 2009 | 19735 |        |
| 2010 | 19873 | 0.70%  |
| 2011 | 19474 | -2.01% |
| 2012 | 19856 | 1.96%  |
| 2013 | 19112 | -3.75% |
| 2014 | 19096 | -0.08% |
| 2015 | 19146 | 0.26%  |
| 2016 | 19358 | 1.11%  |
| 2017 | 19256 | -0.53% |
| 2018 | 19552 | 1.54%  |
| 2019 | 20106 | 2.83%  |

|      |        |
|------|--------|
| CAGR | 0.19%  |
| Exp  | -0.05% |
| Avg  | 0.07%  |

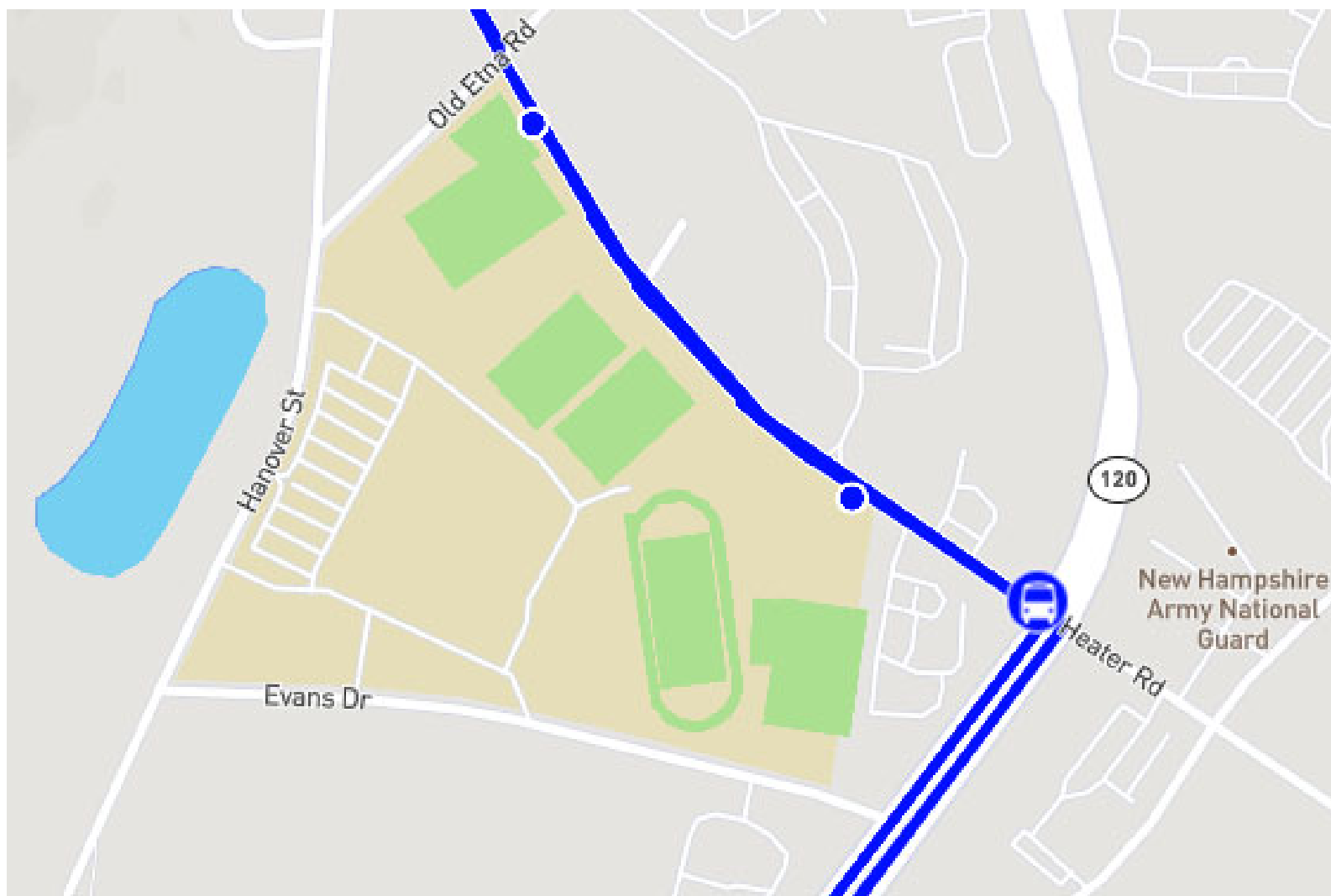


## Advance Transit Bus Service Data

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# BLUE

| BLUE             |         |         |                  |       |          | Main @ Allen                               |       |           |         |         |                |      |      |
|------------------|---------|---------|------------------|-------|----------|--------------------------------------------|-------|-----------|---------|---------|----------------|------|------|
| Canaan           | Enfield | Lebanon | Heater Rd        | DHMC  | Vail DMS |                                            | DHMC  | Heater Rd | Lebanon | Enfield | Canaan         |      |      |
| READ ACROSS      |         |         |                  |       |          |                                            |       |           | 5:15    | 5:25    | 5:40           |      |      |
|                  |         |         |                  |       |          |                                            |       |           | 6:15    | 6:25    | 6:40           |      |      |
| 5:40             | 5:51    | 5:45    | 5:49             | 6:00  | 6:10     | 6:14                                       | 6:24  | 6:29      | 6:37    |         |                |      |      |
|                  |         | 6:10    | 6:14             | 6:25  | 6:35     | 6:39                                       | 6:49  | 6:54      | 7:02    |         |                |      |      |
|                  |         | 6:25    | 6:29             | 6:40  | 6:50     | 6:54                                       | 7:04  | 7:09      | 7:17    |         |                |      |      |
| 6:45             | 6:56    | 6:45    | 6:49             | 7:00  | 7:10     | 7:14                                       | 7:24  | 7:29      | 7:37    |         |                |      |      |
|                  |         | -       | D                | 7:15  | 7:25     | 7:29                                       | 7:39  | 7:44      | 7:52    |         |                |      |      |
|                  |         | 7:10    | 7:14             | 7:27  | 7:37     | 7:41                                       | 7:51  | 7:56      | 8:04    |         |                |      |      |
|                  |         |         |                  |       |          |                                            |       |           | 8:10    |         |                | 8:20 | 8:35 |
| 8:35             | 8:46    | 7:25    | 7:29             | 7:40  | 7:50     | 7:54                                       | 8:05  | 8:10      | 8:18    |         |                |      |      |
|                  |         | 7:40    | 7:44             | 7:56  | 8:07     | 8:11                                       | 8:24  | 8:29      | 8:37    |         |                |      |      |
|                  |         | 8:00    | 8:04             | 8:15  | 8:25     | 8:29                                       | 8:39  | 8:44      | 8:52    |         |                |      |      |
|                  |         | 8:15    | 8:19             | 8:30  | 8:40     | 8:44                                       | 8:54  | 8:59      | 9:07    |         |                |      |      |
|                  |         | 8:30    | 8:34             | 8:45  | 8:55     | 8:59                                       | 9:09  | 9:14      | 9:22    |         |                |      |      |
|                  |         | 8:45    | 8:49             | 9:00  | 9:10     | 9:14                                       | 9:24  | 9:29      | 9:37    |         |                |      |      |
|                  |         | 9:00    |                  |       |          |                                            |       |           |         |         |                |      |      |
|                  |         | 9:00    | 9:04             | 9:15  | 9:25     | 9:29                                       | 9:39  | 9:44      | 9:52    |         |                |      |      |
|                  |         | 9:15    | 9:19             | 9:30  | 9:40     | 9:44                                       | 9:54  | 9:59      | 10:07   |         |                |      |      |
|                  |         | 9:30    | 9:34             | 9:45  | 9:55     | 9:59                                       | 10:09 | 10:14     | 10:22   |         |                |      |      |
|                  |         | 9:45    | 9:49             | 10:00 | 10:10    | 10:14                                      | 10:24 | 10:29     | 10:37   |         |                |      |      |
|                  |         | 10:00   | 10:04            | 10:15 | 10:25    | 10:29                                      | 10:39 | 10:44     | 10:52   |         |                |      |      |
|                  |         | 10:15   | 10:19            | 10:30 | 10:40    | 10:44                                      | 10:54 | 10:59     | 11:07   |         |                |      |      |
|                  |         | 10:30   | 10:34            | 10:45 | 10:55    | 10:59                                      | 11:09 | 11:14     | 11:22   |         |                |      |      |
|                  |         | 10:45   | 10:49            | 11:00 | 11:10    | 11:14                                      | 11:24 | 11:29     | 11:37   |         |                |      |      |
|                  |         | 11:00   | 11:04            | 11:15 | 11:25    | 11:29                                      | 11:39 | 11:44     | 11:52   |         |                |      |      |
|                  |         | 11:15   | 11:19            | 11:30 | 11:40    | 11:44                                      | 11:54 | 11:59     | 12:07   |         |                |      |      |
| 11:30            | 11:34   | 11:45   | 11:55            | 11:59 | 12:09    | 12:14                                      | 12:22 |           |         |         |                |      |      |
| 11:45            | 11:49   | 12:00   | 12:10            | 12:14 | 12:24    | 12:29                                      | 12:37 |           |         |         |                |      |      |
| 12:00            | 12:04   | 12:15   | 12:25            | 12:29 | 12:39    | 12:44                                      | 12:52 |           |         |         |                |      |      |
| 12:15            | 12:19   | 12:30   | 12:40            | 12:44 | 12:54    | 12:59                                      | 1:07  |           |         |         |                |      |      |
| 12:30            | 12:34   | 12:45   | 12:55            | 12:59 | 1:09     | 1:14                                       | 1:22  |           |         |         |                |      |      |
| 12:45            | 12:49   | 1:00    | 1:10             | 1:14  | 1:24     | 1:29                                       | 1:37  |           |         |         |                |      |      |
| 1:00             | 1:04    | 1:15    | 1:25             | 1:29  | 1:39     | 1:44                                       | 1:52  |           |         |         |                |      |      |
| 1:15             | 1:19    | 1:30    | 1:40             | 1:44  | 1:54     | 1:59                                       | 2:07  |           |         |         |                |      |      |
| 1:30             | 1:34    | 1:45    | 1:55             | 1:59  | 2:09     | 2:14                                       | 2:22  |           |         |         |                |      |      |
| 1:45             | 1:49    | 2:00    | 2:10             | 2:14  | 2:24     | 2:29                                       | 2:37  |           |         |         |                |      |      |
| 2:00             | 2:04    | 2:15    | 2:25             | 2:29  | 2:39     | 2:44                                       | 2:52  |           |         |         |                |      |      |
| School year only |         |         |                  |       |          |                                            |       |           | 2:55    | 3:05    | @ H.S.<br>3:10 |      |      |
| @ H.S.<br>3:15   | 3:20    | 2:15    | 2:19             | 2:30  | 2:40     | 2:44                                       | 2:54  | 2:59      | 3:07    |         |                |      |      |
|                  |         | 2:30    | 2:34             | 2:45  | 2:55     | 2:59                                       | 3:09  | 3:14      | 3:22    |         |                |      |      |
|                  |         | 2:45    | 2:49             | 3:00  | 3:10     | 3:14                                       | 3:24  | 3:29      | 3:37    |         |                |      |      |
|                  |         | 3:00    | 3:04             | 3:15  | 3:25     | 3:29                                       | 3:39  | 3:44      | 3:52    |         |                |      |      |
|                  |         | 3:15    | 3:19             | 3:30  | 3:40     | 3:44                                       | 3:54  | 3:59      | 4:07    |         |                |      |      |
|                  |         |         |                  |       |          |                                            | 4:05  | 4:10      | 4:18    |         |                | 4:28 | 4:43 |
|                  |         | 3:30    | 3:34             | 3:45  | 3:55     | 3:59                                       | 4:09  | 4:14      | 4:22    |         |                |      |      |
|                  |         | 3:40    | School year only |       |          |                                            |       |           |         |         |                |      |      |
|                  |         | 3:45    | 3:49             | 4:00  | 4:10     | 4:15                                       | 4:27  | 4:32      | 4:40    |         |                |      |      |
|                  |         | 4:05    | 4:09             | 4:20  | 4:30     | 4:35                                       | 4:47  | 4:52      | 5:02    |         |                |      |      |
| 4:20             | 4:24    | 4:35    | 4:50             | 4:54  | 5:10     | 5:15                                       | 5:23  | 5:33      | 5:48    |         |                |      |      |
| 4:35             | 4:39    | 4:50    | 5:00             | 5:05  | 5:20     | 5:25                                       | 5:35  |           |         |         |                |      |      |
| 4:50             | 4:54    | 5:05    | 5:15             | 5:19  | 5:32     | 5:37                                       | 5:45  |           |         |         |                |      |      |
| 5:05             | 5:09    | 5:20    | 5:30             | 5:34  | 5:45     | 5:50                                       | 6:00  |           |         | 6:10    | 6:25           |      |      |
| 4:43             | 4:54    | 5:13    |                  |       |          |                                            |       |           |         |         |                |      |      |
|                  |         | 5:20    | 5:24             | 5:35  | 5:45     | 5:49                                       | 5:59  | 6:04      | 6:12    |         |                |      |      |
|                  |         | 5:50    | 5:54             | 6:05  | 6:15     | 6:19                                       | 6:29  | 6:34      | 6:42    |         |                |      |      |
|                  |         | 5:48    | 5:59             | 6:13  |          |                                            |       |           |         |         |                |      |      |
|                  |         | 6:15    | 6:19             | 6:30  | 6:38     | to Norwich and Wilder on request           |       |           |         |         |                |      |      |
|                  |         | 6:45    | 6:49             | 7:00  | 7:10     | to US 5 and Dothan Brook School on request |       |           |         |         |                |      |      |

"D" = DROP ON REQUEST ONLY

AM= light face

PM= bold

## Existing Intersection Analysis Worksheets

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Intersection

| Int Delay, s/veh         | 35.1                                                                              |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Future Vol, veh/h        | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 53   | 0                                                                                 | 10   | 10   | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 59                                                                                | 59   | 25                                                                                | 25   | 67   | 67                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 4    | 4                                                                                 |
| Mvmt Flow                | 8                                                                                 | 898  | 0                                                                                 | 4    | 313  | 4                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 642    | 65     | 0      |
| Stage 1              | 12     | -      | -      |
| Stage 2              | 630    | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 442    | 1005   | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 535    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 351    | 945    | -      |
| Mov Cap-2 Maneuver   | 351    | -      | -      |
| Stage 1              | 1006   | -      | -      |
| Stage 2              | 429    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 44.8 | 0  | 7.7 |
| HCM LOS              | E    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 930   | 1576  |
| HCM Lane V/C Ratio    | -   | -        | 0.975 | 0.199 |
| HCM Control Delay (s) | -   | -        | 44.8  | 7.8   |
| HCM Lane LOS          | -   | -        | E     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 17    | 0.7   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing  
Weekday AM

Intersection

| Int Delay, s/veh         | 4.7                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Future Vol, veh/h        | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 57                                                                                | 57   | 84                                                                                | 84   | 83   | 83                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 228                                                                               | 0    | 89                                                                                | 220  | 1    | 36                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |       |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 240    | 213    | 0      | 0 | 312   |
| Stage 1              | 202    | -      | -      | - | -     |
| Stage 2              | 38     | -      | -      | - | -     |
| Critical Hdwy        | 6.41   | 6.21   | -      | - | 4.12  |
| Critical Hdwy Stg 1  | 5.41   | -      | -      | - | -     |
| Critical Hdwy Stg 2  | 5.41   | -      | -      | - | -     |
| Follow-up Hdwy       | 3.509  | 3.309  | -      | - | 2.218 |
| Pot Cap-1 Maneuver   | 750    | 830    | -      | - | 1248  |
| Stage 1              | 834    | -      | -      | - | -     |
| Stage 2              | 987    | -      | -      | - | -     |
| Platoon blocked, %   |        |        | -      | - | -     |
| Mov Cap-1 Maneuver   | 747    | 819    | -      | - | 1244  |
| Mov Cap-2 Maneuver   | 747    | -      | -      | - | -     |
| Stage 1              | 831    | -      | -      | - | -     |
| Stage 2              | 986    | -      | -      | - | -     |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.9 | 0  | 0.3 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 747   | 1244  |
| HCM Lane V/C Ratio    | -   | -        | 0.305 | 0.001 |
| HCM Control Delay (s) | -   | -        | 11.9  | 7.9   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 1.3   | 0     |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing  
Weekday AM

#### Intersection

Int Delay, s/veh 1.8

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 65                                                                                | 5    | 1    | 195                                                                               | 145                                                                               | 25   |
| Future Vol, veh/h        | 65                                                                                | 5    | 1    | 195                                                                               | 145                                                                               | 25   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 86   | 86                                                                                | 77                                                                                | 77   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 71                                                                                | 5    | 1    | 227                                                                               | 188                                                                               | 32   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 441 | 213 | 228   | 0 | - | 0 |
| Stage 1              | 212 | -   | -     | - | - | - |
| Stage 2              | 229 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 577 | 832 | 1323  | - | - | - |
| Stage 1              | 828 | -   | -     | - | - | - |
| Stage 2              | 814 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 567 | 825 | 1313  | - | - | - |
| Mov Cap-2 Maneuver   | 567 | -   | -     | - | - | - |
| Stage 1              | 821 | -   | -     | - | - | - |
| Stage 2              | 807 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 12.1 | 0 | 0 |
| HCM LOS              | B    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1313  | - | 580   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.131 | - | - |
| HCM Control Delay (s) | 7.7   | 0 | 12.1  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.5   | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing  
Weekday AM

Intersection

Intersection Delay, s/veh 13.7  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 45   | 95   | 140                                                                                 | 50   | 20   | 125                                                                                 | 1    |
| Future Vol, veh/h          | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 45   | 95   | 140                                                                                 | 50   | 20   | 125                                                                                 | 1    |
| Peak Hour Factor           | 0.69 | 0.69                                                                              | 0.69 | 0.90 | 0.90                                                                              | 0.90 | 0.83 | 0.83                                                                                | 0.83 | 0.66 | 0.66                                                                                | 0.66 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 4    | 109                                                                               | 145  | 94   | 67                                                                                | 50   | 114  | 169                                                                                 | 60   | 30   | 189                                                                                 | 2    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 12.9 |                                                                                   |      | 12.5 |                                                                                   |      | 15.6 |                                                                                     |      | 12.9 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | C    |                                                                                     |      | B    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 33%   | 2%    | 45%   | 14%   |
| Vol Thru, %            | 49%   | 42%   | 32%   | 86%   |
| Vol Right, %           | 18%   | 56%   | 24%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 285   | 178   | 190   | 146   |
| LT Vol                 | 95    | 3     | 85    | 20    |
| Through Vol            | 140   | 75    | 60    | 125   |
| RT Vol                 | 50    | 100   | 45    | 1     |
| Lane Flow Rate         | 343   | 258   | 211   | 221   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.546 | 0.416 | 0.359 | 0.378 |
| Departure Headway (Hd) | 5.843 | 5.799 | 6.121 | 6.144 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 622   | 624   | 589   | 588   |
| Service Time           | 3.843 | 3.812 | 4.146 | 4.161 |
| HCM Lane V/C Ratio     | 0.551 | 0.413 | 0.358 | 0.376 |
| HCM Control Delay      | 15.6  | 12.9  | 12.5  | 12.9  |
| HCM Lane LOS           | C     | B     | B     | B     |
| HCM 95th-tile Q        | 3.3   | 2     | 1.6   | 1.8   |



# 5: Route 120 & Old Etna Rd/Etna Rd Queues

2022 Existing  
Weekday AM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 103                                                                               | 141                                                                               | 110                                                                               | 113                                                                               | 67                                                                                | 52                                                                                | 2477                                                                                | 343                                                                                 | 58                                                                                  | 803                                                                                 |
| v/c Ratio               | 0.90                                                                              | 0.96                                                                              | 0.87                                                                              | 0.90                                                                              | 0.21                                                                              | 0.54                                                                              | 1.11                                                                                | 0.28                                                                                | 0.59                                                                                | 0.36                                                                                |
| Control Delay           | 123.5                                                                             | 110.4                                                                             | 112.8                                                                             | 120.8                                                                             | 11.4                                                                              | 84.0                                                                              | 83.8                                                                                | 1.1                                                                                 | 87.2                                                                                | 12.2                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 123.5                                                                             | 110.4                                                                             | 112.8                                                                             | 120.8                                                                             | 11.4                                                                              | 84.0                                                                              | 83.8                                                                                | 1.1                                                                                 | 87.2                                                                                | 12.2                                                                                |
| Queue Length 50th (ft)  | 95                                                                                | 95                                                                                | 106                                                                               | 112                                                                               | 0                                                                                 | 47                                                                                | ~1370                                                                               | 3                                                                                   | 52                                                                                  | 173                                                                                 |
| Queue Length 95th (ft)  | #169                                                                              | #180                                                                              | #224                                                                              | #247                                                                              | 43                                                                                | 88                                                                                | #1380                                                                               | 12                                                                                  | 97                                                                                  | 202                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 115                                                                               | 147                                                                               | 128                                                                               | 125                                                                               | 315                                                                               | 113                                                                               | 2228                                                                                | 1213                                                                                | 113                                                                                 | 2257                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.90                                                                              | 0.96                                                                              | 0.86                                                                              | 0.90                                                                              | 0.21                                                                              | 0.46                                                                              | 1.11                                                                                | 0.28                                                                                | 0.51                                                                                | 0.36                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

2022 Existing  
Weekday AM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 80                                                                                | 45                                                                                | 65                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2130                                                                                | 295                                                                                 | 50                                                                                  | 625                                                                                 | 65                                                                                  |
| Future Volume (vph)               | 80                                                                                | 45                                                                                | 65                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2130                                                                                | 295                                                                                 | 50                                                                                  | 625                                                                                 | 65                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.91                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1724                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3482                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1724                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3482                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.78                                                                              | 0.78                                                                              | 0.78                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Adj. Flow (vph)                   | 103                                                                               | 58                                                                                | 83                                                                                | 184                                                                               | 32                                                                                | 74                                                                                | 52                                                                                  | 2477                                                                                | 343                                                                                 | 58                                                                                  | 727                                                                                 | 76                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 36                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 55                                                                                | 0                                                                                   | 0                                                                                   | 92                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 103                                                                               | 105                                                                               | 0                                                                                 | 110                                                                               | 111                                                                               | 12                                                                                | 52                                                                                  | 2477                                                                                | 251                                                                                 | 58                                                                                  | 798                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 9.0                                                                               | 9.0                                                                               |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.9                                                                              | 6.7                                                                                 | 88.1                                                                                | 99.1                                                                                | 7.9                                                                                 | 89.3                                                                                |                                                                                     |
| Effective Green, g (s)            | 9.0                                                                               | 9.0                                                                               |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.9                                                                              | 6.7                                                                                 | 88.1                                                                                | 99.1                                                                                | 7.9                                                                                 | 89.3                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.08                                                                              | 0.08                                                                              | 0.18                                                                              | 0.05                                                                                | 0.63                                                                                | 0.71                                                                                | 0.06                                                                                | 0.64                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 115                                                                               | 110                                                                               |                                                                                   | 128                                                                               | 123                                                                               | 259                                                                               | 84                                                                                  | 2227                                                                                | 1120                                                                                | 99                                                                                  | 2221                                                                                |                                                                                     |
| v/s Ratio Prot                    | 0.06                                                                              | c0.06                                                                             |                                                                                   | 0.07                                                                              | c0.07                                                                             | 0.01                                                                              | 0.03                                                                                | c0.70                                                                               | 0.16                                                                                | c0.03                                                                               | 0.23                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.90                                                                              | 0.95                                                                              |                                                                                   | 0.86                                                                              | 0.90                                                                              | 0.05                                                                              | 0.62                                                                                | 1.11                                                                                | 0.22                                                                                | 0.59                                                                                | 0.36                                                                                |                                                                                     |
| Uniform Delay, d1                 | 65.0                                                                              | 65.3                                                                              |                                                                                   | 63.7                                                                              | 64.0                                                                              | 47.7                                                                              | 65.4                                                                                | 26.0                                                                                | 7.1                                                                                 | 64.5                                                                                | 11.9                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 51.4                                                                              | 69.3                                                                              |                                                                                   | 38.9                                                                              | 51.5                                                                              | 0.0                                                                               | 9.2                                                                                 | 57.5                                                                                | 0.0                                                                                 | 5.6                                                                                 | 0.5                                                                                 |                                                                                     |
| Delay (s)                         | 116.5                                                                             | 134.6                                                                             |                                                                                   | 102.6                                                                             | 115.5                                                                             | 47.7                                                                              | 74.6                                                                                | 83.5                                                                                | 7.1                                                                                 | 70.0                                                                                | 12.4                                                                                |                                                                                     |
| Level of Service                  | F                                                                                 | F                                                                                 |                                                                                   | F                                                                                 | F                                                                                 | D                                                                                 | E                                                                                   | F                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 127.0                                                                             |                                                                                   |                                                                                   | 94.9                                                                              |                                                                                   |                                                                                     | 74.2                                                                                |                                                                                     |                                                                                     | 16.2                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 66.9                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.04                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 84.4%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 93                                                                                | 15                                                                                | 17                                                                                | 15                                                                                | 93                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 66.4%                                                                             | 10.7%                                                                             | 12.1%                                                                             | 10.7%                                                                             | 66.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 20                                                                                | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                |
| End Time (s)           | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Local Start Time (s)   | 38                                                                                | 53                                                                                | 6                                                                                 | 21                                                                                | 38                                                                                | 53                                                                                |
| Local Yield (s)        | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 93 s                                                                                       | 15 s                                                                                     | 17 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 93 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 9

Movement EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↰    | ↱    | ↰    | ↱    | ↱    | ↱    |
| Traffic Vol, veh/h       | 0    | 220  | 475  | 2750 | 1130 | 75   |
| Future Vol, veh/h        | 0    | 220  | 475  | 2750 | 1130 | 75   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | 0    | 40   | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 72   | 72   | 89   | 89   | 93   | 93   |
| Heavy Vehicles, %        | 1    | 1    | 2    | 2    | 4    | 4    |
| Mvmt Flow                | 0    | 306  | 534  | 3090 | 1215 | 81   |

Major/Minor Minor2 Major1 Major2

|                      |      |      |       |   |   |   |
|----------------------|------|------|-------|---|---|---|
| Conflicting Flow All | 3869 | 648  | 1296  | 0 | - | 0 |
| Stage 1              | 1256 | -    | -     | - | - | - |
| Stage 2              | 2613 | -    | -     | - | - | - |
| Critical Hdwy        | 6.82 | 6.92 | 4.14  | - | - | - |
| Critical Hdwy Stg 1  | 5.82 | -    | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.82 | -    | -     | - | - | - |
| Follow-up Hdwy       | 3.51 | 3.31 | 2.22  | - | - | - |
| Pot Cap-1 Maneuver   | 3    | 415  | ~ 531 | - | - | - |
| Stage 1              | 233  | -    | -     | - | - | - |
| Stage 2              | 41   | -    | -     | - | - | - |
| Platoon blocked, %   |      |      |       | - | - | - |
| Mov Cap-1 Maneuver   | 0    | 415  | ~ 531 | - | - | - |
| Mov Cap-2 Maneuver   | 0    | -    | -     | - | - | - |
| Stage 1              | 0    | -    | -     | - | - | - |
| Stage 2              | 41   | -    | -     | - | - | - |

Approach EB NB SB

|                      |      |      |   |
|----------------------|------|------|---|
| HCM Control Delay, s | 34.3 | 10.1 | 0 |
| HCM LOS              | D    |      |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

|                       |       |   |   |       |   |   |
|-----------------------|-------|---|---|-------|---|---|
| Capacity (veh/h)      | ~ 531 | - | - | 415   | - | - |
| HCM Lane V/C Ratio    | 1.005 | - | - | 0.736 | - | - |
| HCM Control Delay (s) | 68.3  | - | 0 | 34.3  | - | - |
| HCM Lane LOS          | F     | - | A | D     | - | - |
| HCM 95th %tile Q(veh) | 14.3  | - | - | 5.9   | - | - |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon



Intersection

Int Delay, s/veh 7.2

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 1                                                                                 | 75   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Future Vol, veh/h        | 1                                                                                 | 75   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 81                                                                                | 81   | 50                                                                                | 50   | 73   | 73                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 1                                                                                 | 93   | 10                                                                                | 10   | 130  | 7                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 282    | 18     | 0      |
| Stage 1              | 15     | -      | -      |
| Stage 2              | 267    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 708    | 1061   | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 778    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 651    | 1058   | -      |
| Mov Cap-2 Maneuver   | 651    | -      | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 715    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.8 | 0  | 7.1 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1049  | 1609  |
| HCM Lane V/C Ratio    | -   | -        | 0.089 | 0.081 |
| HCM Control Delay (s) | -   | -        | 8.8   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.3   | 0.3   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing  
Weekday PM

Intersection

| Int Delay, s/veh         | 1.7                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 30                                                                                | 3    | 20                                                                                | 60   | 3    | 45                                                                                |
| Future Vol, veh/h        | 30                                                                                | 3    | 20                                                                                | 60   | 3    | 45                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 37                                                                                | 4    | 34                                                                                | 102  | 4    | 56                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 149    | 85     | 0      | 0 | 136  |
| Stage 1              | 85     | -      | -      | - | -    |
| Stage 2              | 64     | -      | -      | - | -    |
| Critical Hdwy        | 6.4    | 6.2    | -      | - | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | -      | - | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | -      | - | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | -      | - | 2.2  |
| Pot Cap-1 Maneuver   | 848    | 980    | -      | - | 1461 |
| Stage 1              | 943    | -      | -      | - | -    |
| Stage 2              | 964    | -      | -      | - | -    |
| Platoon blocked, %   |        |        | -      | - | -    |
| Mov Cap-1 Maneuver   | 845    | 980    | -      | - | 1461 |
| Mov Cap-2 Maneuver   | 845    | -      | -      | - | -    |
| Stage 1              | 943    | -      | -      | - | -    |
| Stage 2              | 961    | -      | -      | - | -    |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.4 | 0  | 0.5 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 856   | 1461  |
| HCM Lane V/C Ratio    | -   | -        | 0.047 | 0.003 |
| HCM Control Delay (s) | -   | -        | 9.4   | 7.5   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing  
Weekday PM

#### Intersection

Int Delay, s/veh 0.4

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 1    | 1    | 140                                                                               | 340                                                                               | 40   |
| Future Vol, veh/h        | 10                                                                                | 1    | 1    | 140                                                                               | 340                                                                               | 40   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 56                                                                                | 56   | 97   | 97                                                                                | 75                                                                                | 75   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 18                                                                                | 2    | 1    | 144                                                                               | 453                                                                               | 53   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 627 | 481 | 507   | 0 | - | 0 |
| Stage 1              | 481 | -   | -     | - | - | - |
| Stage 2              | 146 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.16  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.254 | - | - | - |
| Pot Cap-1 Maneuver   | 451 | 589 | 1038  | - | - | - |
| Stage 1              | 626 | -   | -     | - | - | - |
| Stage 2              | 886 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 450 | 588 | 1037  | - | - | - |
| Mov Cap-2 Maneuver   | 450 | -   | -     | - | - | - |
| Stage 1              | 625 | -   | -     | - | - | - |
| Stage 2              | 885 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 13.2 | 0.1 | 0 |
| HCM LOS              | B    |     |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1037  | - | 460   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.043 | - | - |
| HCM Control Delay (s) | 8.5   | 0 | 13.2  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.1   | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing  
Weekday PM

Intersection

Intersection Delay, s/veh 13.8  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 15                                                                                | 45   | 125  | 10                                                                                | 25   | 25   | 110                                                                                 | 70   | 15   | 305                                                                                 | 5    |
| Future Vol, veh/h          | 3    | 15                                                                                | 45   | 125  | 10                                                                                | 25   | 25   | 110                                                                                 | 70   | 15   | 305                                                                                 | 5    |
| Peak Hour Factor           | 0.45 | 0.45                                                                              | 0.45 | 0.95 | 0.95                                                                              | 0.95 | 0.77 | 0.77                                                                                | 0.77 | 0.76 | 0.76                                                                                | 0.76 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 7    | 33                                                                                | 100  | 132  | 11                                                                                | 26   | 32   | 143                                                                                 | 91   | 20   | 401                                                                                 | 7    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 10.4 |                                                                                   |      | 11.6 |                                                                                   |      | 12   |                                                                                     |      | 17   |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | B    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 12%   | 5%    | 78%   | 5%    |
| Vol Thru, %            | 54%   | 24%   | 6%    | 94%   |
| Vol Right, %           | 34%   | 71%   | 16%   | 2%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 205   | 63    | 160   | 325   |
| LT Vol                 | 25    | 3     | 125   | 15    |
| Through Vol            | 110   | 15    | 10    | 305   |
| RT Vol                 | 70    | 45    | 25    | 5     |
| Lane Flow Rate         | 266   | 140   | 168   | 428   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.398 | 0.221 | 0.286 | 0.629 |
| Departure Headway (Hd) | 5.375 | 5.674 | 6.105 | 5.292 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 666   | 629   | 586   | 680   |
| Service Time           | 3.437 | 3.747 | 4.175 | 3.345 |
| HCM Lane V/C Ratio     | 0.399 | 0.223 | 0.287 | 0.629 |
| HCM Control Delay      | 12    | 10.4  | 11.6  | 17    |
| HCM Lane LOS           | B     | B     | B     | C     |
| HCM 95th-tile Q        | 1.9   | 0.8   | 1.2   | 4.5   |



# 5: Route 120 & Old Etna Rd/Etna Rd Queues

2022 Existing  
Weekday PM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 48                                                                                | 102                                                                               | 154                                                                               | 155                                                                               | 52                                                                                | 16                                                                                | 761                                                                                | 128                                                                                 | 57                                                                                  | 1886                                                                                |
| v/c Ratio               | 0.44                                                                              | 0.61                                                                              | 0.74                                                                              | 0.78                                                                              | 0.13                                                                              | 0.21                                                                              | 0.36                                                                               | 0.11                                                                                | 0.52                                                                                | 0.82                                                                                |
| Control Delay           | 75.1                                                                              | 39.8                                                                              | 79.6                                                                              | 83.2                                                                              | 4.9                                                                               | 70.7                                                                              | 16.9                                                                               | 0.8                                                                                 | 80.2                                                                                | 24.7                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 75.1                                                                              | 39.8                                                                              | 79.6                                                                              | 83.2                                                                              | 4.9                                                                               | 70.7                                                                              | 16.9                                                                               | 0.8                                                                                 | 80.2                                                                                | 24.7                                                                                |
| Queue Length 50th (ft)  | 43                                                                                | 29                                                                                | 144                                                                               | 151                                                                               | 0                                                                                 | 14                                                                                | 186                                                                                | 0                                                                                   | 51                                                                                  | 554                                                                                 |
| Queue Length 95th (ft)  | 78                                                                                | 76                                                                                | 207                                                                               | 218                                                                               | 17                                                                                | 40                                                                                | 282                                                                                | 10                                                                                  | 98                                                                                  | #1098                                                                               |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 179                                                                               | 231                                                                               | 264                                                                               | 254                                                                               | 406                                                                               | 114                                                                               | 2137                                                                               | 1230                                                                                | 140                                                                                 | 2310                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.27                                                                              | 0.44                                                                              | 0.58                                                                              | 0.61                                                                              | 0.13                                                                              | 0.14                                                                              | 0.36                                                                               | 0.10                                                                                | 0.41                                                                                | 0.82                                                                                |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2022 Existing  
Weekday PM

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 40                                                                                | 25                                                                                | 60                                                                                | 250                                                                               | 10                                                                                | 50                                                                                | 15                                                                                  | 715                                                                                 | 120                                                                                 | 55                                                                                  | 1790                                                                                | 40                                                                                  |
| Future Volume (vph)               | 40                                                                                | 25                                                                                | 60                                                                                | 250                                                                               | 10                                                                                | 50                                                                                | 15                                                                                  | 715                                                                                 | 120                                                                                 | 55                                                                                  | 1790                                                                                | 40                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3561                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3561                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 48                                                                                | 30                                                                                | 72                                                                                | 291                                                                               | 12                                                                                | 58                                                                                | 16                                                                                  | 761                                                                                 | 128                                                                                 | 57                                                                                  | 1845                                                                                | 41                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 65                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 40                                                                                | 0                                                                                   | 0                                                                                   | 37                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 48                                                                                | 37                                                                                | 0                                                                                 | 154                                                                               | 154                                                                               | 12                                                                                | 16                                                                                  | 761                                                                                 | 91                                                                                  | 57                                                                                  | 1885                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 8.5                                                                               | 8.5                                                                               |                                                                                   | 17.5                                                                              | 17.5                                                                              | 31.0                                                                              | 2.8                                                                                 | 82.5                                                                                | 100.0                                                                               | 7.5                                                                                 | 87.2                                                                                |                                                                                     |
| Effective Green, g (s)            | 8.5                                                                               | 8.5                                                                               |                                                                                   | 17.5                                                                              | 17.5                                                                              | 31.0                                                                              | 2.8                                                                                 | 82.5                                                                                | 100.0                                                                               | 7.5                                                                                 | 87.2                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.12                                                                              | 0.12                                                                              | 0.22                                                                              | 0.02                                                                                | 0.59                                                                                | 0.71                                                                                | 0.05                                                                                | 0.62                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 109                                                                               | 102                                                                               |                                                                                   | 207                                                                               | 199                                                                               | 329                                                                               | 35                                                                                  | 2106                                                                                | 1142                                                                                | 95                                                                                  | 2217                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.03                                                                             | 0.02                                                                              |                                                                                   | 0.09                                                                              | c0.10                                                                             | 0.01                                                                              | 0.01                                                                                | 0.21                                                                                | 0.06                                                                                | c0.03                                                                               | c0.53                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.44                                                                              | 0.36                                                                              |                                                                                   | 0.74                                                                              | 0.77                                                                              | 0.03                                                                              | 0.46                                                                                | 0.36                                                                                | 0.08                                                                                | 0.60                                                                                | 0.85                                                                                |                                                                                     |
| Uniform Delay, d1                 | 63.5                                                                              | 63.2                                                                              |                                                                                   | 59.1                                                                              | 59.3                                                                              | 42.8                                                                              | 67.8                                                                                | 15.0                                                                                | 6.1                                                                                 | 64.8                                                                                | 21.2                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 1.0                                                                               | 0.8                                                                               |                                                                                   | 11.9                                                                              | 15.6                                                                              | 0.0                                                                               | 3.4                                                                                 | 0.5                                                                                 | 0.0                                                                                 | 6.6                                                                                 | 4.3                                                                                 |                                                                                     |
| Delay (s)                         | 64.5                                                                              | 64.0                                                                              |                                                                                   | 71.0                                                                              | 75.0                                                                              | 42.8                                                                              | 71.3                                                                                | 15.5                                                                                | 6.1                                                                                 | 71.4                                                                                | 25.5                                                                                |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 64.1                                                                              |                                                                                   |                                                                                   | 68.6                                                                              |                                                                                   |                                                                                     | 15.1                                                                                |                                                                                     |                                                                                     | 26.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 29.9                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.82                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 75.1%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 77                                                                                | 20                                                                                | 28                                                                                | 17                                                                                | 75                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 55.0%                                                                             | 14.3%                                                                             | 20.0%                                                                             | 12.1%                                                                             | 53.6%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 36                                                                                | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                |
| End Time (s)           | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Local Start Time (s)   | 54                                                                                | 69                                                                                | 6                                                                                 | 26                                                                                | 54                                                                                | 71                                                                                |
| Local Yield (s)        | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 110  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 77 s                                                                                       | 20 s                                                                                     | 28 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 75 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 23.1

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 5                                                                                 | 145                                                                               | 85                                                                                | 1075                                                                              | 2660                                                                              | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 145                                                                               | 85                                                                                | 1075                                                                              | 2660                                                                              | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 86                                                                                | 86                                                                                | 98                                                                                | 98                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1                                                                                 |
| Mvmt Flow                | 6                                                                                 | 169                                                                               | 87                                                                                | 1097                                                                              | 2860                                                                              | 16                                                                                |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 3592   | 1439   | 2877   |
| Stage 1              | 2869   | -      | -      |
| Stage 2              | 723    | -      | -      |
| Critical Hdwy        | 6.8    | 6.9    | 4.14   |
| Critical Hdwy Stg 1  | 5.8    | -      | -      |
| Critical Hdwy Stg 2  | 5.8    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.22   |
| Pot Cap-1 Maneuver   | ~ 4    | ~ 125  | 127    |
| Stage 1              | 30     | -      | -      |
| Stage 2              | 447    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | ~ 1    | ~ 125  | 127    |
| Mov Cap-2 Maneuver   | ~ 1    | -      | -      |
| Stage 1              | 9      | -      | -      |
| Stage 2              | 447    | -      | -      |

| Approach             | EB    | NB  | SB |
|----------------------|-------|-----|----|
| HCM Control Delay, s | 521.9 | 5.8 | 0  |
| HCM LOS              | F     |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1  | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|--------|-------|-----|-----|
| Capacity (veh/h)      | 127   | -   | 1      | 125   | -   | -   |
| HCM Lane V/C Ratio    | 0.683 | -   | 5.814  | 1.349 | -   | -   |
| HCM Control Delay (s) | 79.5  | \$  | 7942.6 | 266   | -   | -   |
| HCM Lane LOS          | F     | -   | F      | F     | -   | -   |
| HCM 95th %tile Q(veh) | 3.7   | -   | 1.8    | 11.1  | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Intersection

| Int Delay, s/veh         | 7.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 30   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 30   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 9    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 67                                                                                | 67   | 25                                                                                | 25   | 64   | 64                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 45   | 0                                                                                 | 4    | 31   | 2                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 66     | 11     | 0      |
| Stage 1              | 2      | -      | -      |
| Stage 2              | 64     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 944    | 1076   | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 964    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 926    | 1067   | -      |
| Mov Cap-2 Maneuver   | 926    | -      | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 946    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.5 | 0  | 6.9 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1067  | 1631  |
| HCM Lane V/C Ratio    | -   | -        | 0.042 | 0.019 |
| HCM Control Delay (s) | -   | -        | 8.5   | 7.2   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0.1   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing  
Sat MIDDAY

Intersection

| Int Delay, s/veh         | 1                                                                                 |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 0    | 15                                                                                | 10   | 0    | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 0    | 15                                                                                | 10   | 0    | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 63                                                                                | 63   | 72                                                                                | 72   | 58   | 58                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 8                                                                                 | 0    | 21                                                                                | 14   | 0    | 26                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 54     | 30     | 0      | 0 | 35   |
| Stage 1              | 28     | -      | -      | - | -    |
| Stage 2              | 26     | -      | -      | - | -    |
| Critical Hdwy        | 6.4    | 6.2    | -      | - | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | -      | - | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | -      | - | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | -      | - | 2.2  |
| Pot Cap-1 Maneuver   | 959    | 1050   | -      | - | 1589 |
| Stage 1              | 1000   | -      | -      | - | -    |
| Stage 2              | 1002   | -      | -      | - | -    |
| Platoon blocked, %   |        |        | -      | - | -    |
| Mov Cap-1 Maneuver   | 959    | 1048   | -      | - | 1589 |
| Mov Cap-2 Maneuver   | 959    | -      | -      | - | -    |
| Stage 1              | 1000   | -      | -      | - | -    |
| Stage 2              | 1002   | -      | -      | - | -    |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.8 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 959   | 1589 |
| HCM Lane V/C Ratio    | -   | -        | 0.008 | -    |
| HCM Control Delay (s) | -   | -        | 8.8   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2022 Existing  
Sat MIDDAY

#### Intersection

| Int Delay, s/veh         | 0.6                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Future Vol, veh/h        | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 75                                                                                | 75   | 64   | 64                                                                                | 89                                                                                | 89   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 13                                                                                | 0    | 0    | 94                                                                                | 90                                                                                | 17   |

| Major/Minor          | Minor2 | Major1 |      | Major2 |   |   |
|----------------------|--------|--------|------|--------|---|---|
| Conflicting Flow All | 196    | 102    | 107  | 0      | - | 0 |
| Stage 1              | 99     | -      | -    | -      | - | - |
| Stage 2              | 97     | -      | -    | -      | - | - |
| Critical Hdwy        | 6.4    | 6.2    | 4.1  | -      | - | - |
| Critical Hdwy Stg 1  | 5.4    | -      | -    | -      | - | - |
| Critical Hdwy Stg 2  | 5.4    | -      | -    | -      | - | - |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.2  | -      | - | - |
| Pot Cap-1 Maneuver   | 797    | 959    | 1497 | -      | - | - |
| Stage 1              | 930    | -      | -    | -      | - | - |
| Stage 2              | 932    | -      | -    | -      | - | - |
| Platoon blocked, %   |        |        |      | -      | - | - |
| Mov Cap-1 Maneuver   | 797    | 956    | 1497 | -      | - | - |
| Mov Cap-2 Maneuver   | 797    | -      | -    | -      | - | - |
| Stage 1              | 930    | -      | -    | -      | - | - |
| Stage 2              | 932    | -      | -    | -      | - | - |

| Approach             | EB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 9.6 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBL  | NBT | EBLn1 | SBT | SBR |
|-----------------------|------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1497 | -   | 797   | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | 0.017 | -   | -   |
| HCM Control Delay (s) | 0    | -   | 9.6   | -   | -   |
| HCM Lane LOS          | A    | -   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | 0.1   | -   | -   |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing  
Sat MIDDAY

Intersection

Intersection Delay, s/veh 7.7  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 10                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 10                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Peak Hour Factor    | 0.60 | 0.60                                                                              | 0.60 | 0.82 | 0.82                                                                              | 0.82 | 0.74 | 0.74                                                                                | 0.74 | 0.88 | 0.88                                                                                | 0.88 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 17                                                                                | 8    | 73   | 2                                                                                 | 12   | 3    | 68                                                                                  | 41   | 2    | 80                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB  | WB | NB  | SB  |
|----------------------------|-----|----|-----|-----|
| Opposing Approach          | WB  | EB | SB  | NB  |
| Opposing Lanes             | 1   | 1  | 1   | 1   |
| Conflicting Approach Left  | SB  | NB | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1  | 1   | 1   |
| Conflicting Approach Right | NB  | SB | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1  | 1   | 1   |
| HCM Control Delay          | 7.3 | 8  | 7.6 | 7.7 |
| HCM LOS                    | A   | A  | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 2%    | 0%    | 83%   | 3%    |
| Vol Thru, %            | 61%   | 67%   | 3%    | 97%   |
| Vol Right, %           | 37%   | 33%   | 14%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 82    | 15    | 72    | 72    |
| LT Vol                 | 2     | 0     | 60    | 2     |
| Through Vol            | 50    | 10    | 2     | 70    |
| RT Vol                 | 30    | 5     | 10    | 0     |
| Lane Flow Rate         | 111   | 25    | 88    | 82    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.121 | 0.029 | 0.106 | 0.095 |
| Departure Headway (Hd) | 3.944 | 4.214 | 4.334 | 4.186 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 894   | 855   | 815   | 843   |
| Service Time           | 2.032 | 2.214 | 2.426 | 2.276 |
| HCM Lane V/C Ratio     | 0.124 | 0.029 | 0.108 | 0.097 |
| HCM Control Delay      | 7.6   | 7.3   | 8     | 7.7   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.1   | 0.4   | 0.3   |



5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2022 Existing  
Sat MIDDAY

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 20                                                                                | 27                                                                                | 55                                                                                | 56                                                                                | 25                                                                                | 11                                                                                | 567                                                                                | 89                                                                                  | 31                                                                                  | 510                                                                                 |
| v/c Ratio               | 0.25                                                                              | 0.29                                                                              | 0.51                                                                              | 0.54                                                                              | 0.09                                                                              | 0.15                                                                              | 0.22                                                                               | 0.07                                                                                | 0.35                                                                                | 0.19                                                                                |
| Control Delay           | 71.8                                                                              | 38.7                                                                              | 78.7                                                                              | 78.4                                                                              | 0.6                                                                               | 69.0                                                                              | 9.4                                                                                | 0.7                                                                                 | 74.2                                                                                | 7.3                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 71.8                                                                              | 38.7                                                                              | 78.7                                                                              | 78.4                                                                              | 0.6                                                                               | 69.0                                                                              | 9.4                                                                                | 0.7                                                                                 | 74.2                                                                                | 7.3                                                                                 |
| Queue Length 50th (ft)  | 18                                                                                | 6                                                                                 | 51                                                                                | 52                                                                                | 0                                                                                 | 10                                                                                | 98                                                                                 | 0                                                                                   | 28                                                                                  | 58                                                                                  |
| Queue Length 95th (ft)  | 38                                                                                | 29                                                                                | 96                                                                                | 100                                                                               | 0                                                                                 | 32                                                                                | 154                                                                                | 7                                                                                   | 62                                                                                  | 130                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 215                                                                               | 219                                                                               | 265                                                                               | 256                                                                               | 387                                                                               | 167                                                                               | 2521                                                                               | 1392                                                                                | 216                                                                                 | 2636                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.09                                                                              | 0.12                                                                              | 0.21                                                                              | 0.22                                                                              | 0.06                                                                              | 0.07                                                                              | 0.22                                                                               | 0.06                                                                                | 0.14                                                                                | 0.19                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2022 Existing  
Sat MIDDAY

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 15                                                                                | 5                                                                                 | 15                                                                                | 90                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 510                                                                                 | 80                                                                                  | 30                                                                                  | 480                                                                                 | 10                                                                                  |
| Future Volume (vph)               | 15                                                                                | 5                                                                                 | 15                                                                                | 90                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 510                                                                                 | 80                                                                                  | 30                                                                                  | 480                                                                                 | 10                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.75                                                                              | 0.75                                                                              | 0.75                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 20                                                                                | 7                                                                                 | 20                                                                                | 102                                                                               | 6                                                                                 | 28                                                                                | 11                                                                                  | 567                                                                                 | 89                                                                                  | 31                                                                                  | 500                                                                                 | 10                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 19                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 21                                                                                | 0                                                                                   | 0                                                                                   | 22                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 20                                                                                | 8                                                                                 | 0                                                                                 | 55                                                                                | 54                                                                                | 4                                                                                 | 11                                                                                  | 567                                                                                 | 67                                                                                  | 31                                                                                  | 509                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 3%                                                                                | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 5.3                                                                               | 5.3                                                                               |                                                                                   | 9.3                                                                               | 9.3                                                                               | 21.3                                                                              | 2.6                                                                                 | 95.4                                                                                | 104.7                                                                               | 6.0                                                                                 | 98.8                                                                                |                                                                                     |
| Effective Green, g (s)            | 5.3                                                                               | 5.3                                                                               |                                                                                   | 9.3                                                                               | 9.3                                                                               | 21.3                                                                              | 2.6                                                                                 | 95.4                                                                                | 104.7                                                                               | 6.0                                                                                 | 98.8                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.04                                                                              | 0.04                                                                              |                                                                                   | 0.07                                                                              | 0.07                                                                              | 0.15                                                                              | 0.02                                                                                | 0.68                                                                                | 0.75                                                                                | 0.04                                                                                | 0.71                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 67                                                                                | 62                                                                                |                                                                                   | 107                                                                               | 102                                                                               | 219                                                                               | 33                                                                                  | 2459                                                                                | 1207                                                                                | 76                                                                                  | 2513                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                              |                                                                                   | 0.03                                                                              | c0.03                                                                             | 0.00                                                                              | 0.01                                                                                | c0.16                                                                               | 0.04                                                                                | c0.02                                                                               | c0.14                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.30                                                                              | 0.13                                                                              |                                                                                   | 0.51                                                                              | 0.53                                                                              | 0.02                                                                              | 0.33                                                                                | 0.23                                                                                | 0.06                                                                                | 0.41                                                                                | 0.20                                                                                |                                                                                     |
| Uniform Delay, d1                 | 65.5                                                                              | 65.1                                                                              |                                                                                   | 63.2                                                                              | 63.2                                                                              | 50.5                                                                              | 67.8                                                                                | 8.4                                                                                 | 4.6                                                                                 | 65.3                                                                                | 7.1                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 0.9                                                                               | 0.3                                                                               |                                                                                   | 1.7                                                                               | 2.6                                                                               | 0.0                                                                               | 2.2                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 1.3                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         | 66.5                                                                              | 65.4                                                                              |                                                                                   | 64.9                                                                              | 65.9                                                                              | 50.5                                                                              | 70.0                                                                                | 8.6                                                                                 | 4.6                                                                                 | 66.6                                                                                | 7.3                                                                                 |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 65.9                                                                              |                                                                                   |                                                                                   | 62.6                                                                              |                                                                                   |                                                                                     | 9.1                                                                                 |                                                                                     |                                                                                     | 10.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 16.9                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.27                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 42.8%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing  
Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 69                                                                                | 23                                                                                | 29                                                                                | 23                                                                                | 65                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 49.3%                                                                             | 16.4%                                                                             | 20.7%                                                                             | 16.4%                                                                             | 46.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 40                                                                                | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                |
| End Time (s)           | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Local Start Time (s)   | 58                                                                                | 77                                                                                | 6                                                                                 | 29                                                                                | 58                                                                                | 81                                                                                |
| Local Yield (s)        | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                         |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 69 s                                                                                       | 23 s                                                                                    | 29 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                         |                                                                                          |
| 23 s                                                                                   | 65 s                                                                                       |                                                                                         |                                                                                          |

Intersection

Int Delay, s/veh 0.5

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |  |  |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 30                                                                                | 30                                                                                | 770                                                                               | 765                                                                               | 5    |
| Future Vol, veh/h        | 5                                                                                 | 30                                                                                | 30                                                                                | 770                                                                               | 765                                                                               | 5    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 83                                                                                | 83                                                                                | 96                                                                                | 96                                                                                | 97                                                                                | 97   |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1    |
| Mvmt Flow                | 6                                                                                 | 36                                                                                | 31                                                                                | 802                                                                               | 789                                                                               | 5    |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |      |     |      |   |   |   |
|----------------------|------|-----|------|---|---|---|
| Conflicting Flow All | 1255 | 397 | 794  | 0 | - | 0 |
| Stage 1              | 792  | -   | -    | - | - | - |
| Stage 2              | 463  | -   | -    | - | - | - |
| Critical Hdwy        | 6.8  | 6.9 | 4.12 | - | - | - |
| Critical Hdwy Stg 1  | 5.8  | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.8  | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5  | 3.3 | 2.21 | - | - | - |
| Pot Cap-1 Maneuver   | 166  | 608 | 830  | - | - | - |
| Stage 1              | 412  | -   | -    | - | - | - |
| Stage 2              | 606  | -   | -    | - | - | - |
| Platoon blocked, %   |      |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 160  | 608 | 830  | - | - | - |
| Mov Cap-2 Maneuver   | 160  | -   | -    | - | - | - |
| Stage 1              | 397  | -   | -    | - | - | - |
| Stage 2              | 606  | -   | -    | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 13.7 | 0.4 | 0 |
| HCM LOS              | B    |     |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-----|-----|-------|-------|-----|-----|
|-----------------------|-----|-----|-------|-------|-----|-----|

|                       |       |   |       |       |   |   |
|-----------------------|-------|---|-------|-------|---|---|
| Capacity (veh/h)      | 830   | - | 160   | 608   | - | - |
| HCM Lane V/C Ratio    | 0.038 | - | 0.038 | 0.059 | - | - |
| HCM Control Delay (s) | 9.5   | - | 28.4  | 11.3  | - | - |
| HCM Lane LOS          | A     | - | D     | B     | - | - |
| HCM 95th %tile Q(veh) | 0.1   | - | 0.1   | 0.2   | - | - |



Intersection

| Int Delay, s/veh         | 13.8                                                                              |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 360  | 0                                                                                 | 1    | 140  | 2                                                                                 |
| Future Vol, veh/h        | 5                                                                                 | 360  | 0                                                                                 | 1    | 140  | 2                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 53   | 0                                                                                 | 10   | 10   | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 59                                                                                | 59   | 25                                                                                | 25   | 67   | 67                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 4    | 4                                                                                 |
| Mvmt Flow                | 8                                                                                 | 610  | 0                                                                                 | 4    | 209  | 3                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 433    | 65     | 0      |
| Stage 1              | 12     | -      | -      |
| Stage 2              | 421    | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 584    | 1005   | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 667    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 501    | 945    | -      |
| Mov Cap-2 Maneuver   | 501    | -      | -      |
| Stage 1              | 1006   | -      | -      |
| Stage 2              | 578    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 16.1 | 0  | 7.5 |
| HCM LOS              | C    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 934   | 1576  |
| HCM Lane V/C Ratio    | -   | -        | 0.662 | 0.133 |
| HCM Control Delay (s) | -   | -        | 16.1  | 7.6   |
| HCM Lane LOS          | -   | -        | C     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 5.2   | 0.5   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing - no adjustments  
Weekday AM

Intersection

| Int Delay, s/veh         | 4.2                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 90                                                                                | 0    | 50                                                                                | 125  | 1    | 20                                                                                |
| Future Vol, veh/h        | 90                                                                                | 0    | 50                                                                                | 125  | 1    | 20                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 57                                                                                | 57   | 84                                                                                | 84   | 83   | 83                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 158                                                                               | 0    | 60                                                                                | 149  | 1    | 24                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |       |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 164    | 149    | 0      | 0 | 212   |
| Stage 1              | 138    | -      | -      | - | -     |
| Stage 2              | 26     | -      | -      | - | -     |
| Critical Hdwy        | 6.41   | 6.21   | -      | - | 4.12  |
| Critical Hdwy Stg 1  | 5.41   | -      | -      | - | -     |
| Critical Hdwy Stg 2  | 5.41   | -      | -      | - | -     |
| Follow-up Hdwy       | 3.509  | 3.309  | -      | - | 2.218 |
| Pot Cap-1 Maneuver   | 829    | 900    | -      | - | 1358  |
| Stage 1              | 891    | -      | -      | - | -     |
| Stage 2              | 999    | -      | -      | - | -     |
| Platoon blocked, %   |        |        | -      | - | -     |
| Mov Cap-1 Maneuver   | 826    | 888    | -      | - | 1354  |
| Mov Cap-2 Maneuver   | 826    | -      | -      | - | -     |
| Stage 1              | 888    | -      | -      | - | -     |
| Stage 2              | 998    | -      | -      | - | -     |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.4 | 0  | 0.4 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 826   | 1354  |
| HCM Lane V/C Ratio    | -   | -        | 0.191 | 0.001 |
| HCM Control Delay (s) | -   | -        | 10.4  | 7.7   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.7   | 0     |

3: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

2022 Existing - no adjustments  
Weekday AM

Intersection

Int Delay, s/veh 1.6

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 45                                                                                | 3    | 1    | 135                                                                               | 100                                                                               | 20   |
| Future Vol, veh/h        | 45                                                                                | 3    | 1    | 135                                                                               | 100                                                                               | 20   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 86   | 86                                                                                | 77                                                                                | 77   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 49                                                                                | 3    | 1    | 157                                                                               | 130                                                                               | 26   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 310 | 152 | 164   | 0 | - | 0 |
| Stage 1              | 151 | -   | -     | - | - | - |
| Stage 2              | 159 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 687 | 900 | 1396  | - | - | - |
| Stage 1              | 882 | -   | -     | - | - | - |
| Stage 2              | 875 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 675 | 892 | 1385  | - | - | - |
| Mov Cap-2 Maneuver   | 675 | -   | -     | - | - | - |
| Stage 1              | 874 | -   | -     | - | - | - |
| Stage 2              | 868 | -   | -     | - | - | - |

Approach EB NB SB

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 10.7 | 0.1 | 0 |
| HCM LOS              | B    |     |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1385  | - | 685   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.076 | - | - |
| HCM Control Delay (s) | 7.6   | 0 | 10.7  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.2   | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing - no adjustments

Weekday AM

Intersection

Intersection Delay, s/veh 9.7  
Intersection LOS A

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 2    | 50                                                                                | 70   | 60   | 40                                                                                | 30   | 65   | 95                                                                                  | 35   | 15   | 85                                                                                  | 1    |
| Future Vol, veh/h          | 2    | 50                                                                                | 70   | 60   | 40                                                                                | 30   | 65   | 95                                                                                  | 35   | 15   | 85                                                                                  | 1    |
| Peak Hour Factor           | 0.69 | 0.69                                                                              | 0.69 | 0.90 | 0.90                                                                              | 0.90 | 0.83 | 0.83                                                                                | 0.83 | 0.66 | 0.66                                                                                | 0.66 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 3    | 72                                                                                | 101  | 67   | 44                                                                                | 33   | 78   | 114                                                                                 | 42   | 23   | 129                                                                                 | 2    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 9.3  |                                                                                   |      | 9.5  |                                                                                   |      | 10.3 |                                                                                     |      | 9.6  |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | A    |                                                                                   |      | B    |                                                                                     |      | A    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 33%   | 2%    | 46%   | 15%   |
| Vol Thru, %            | 49%   | 41%   | 31%   | 84%   |
| Vol Right, %           | 18%   | 57%   | 23%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 195   | 122   | 130   | 101   |
| LT Vol                 | 65    | 2     | 60    | 15    |
| Through Vol            | 95    | 50    | 40    | 85    |
| RT Vol                 | 35    | 70    | 30    | 1     |
| Lane Flow Rate         | 235   | 177   | 144   | 153   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.32  | 0.235 | 0.204 | 0.217 |
| Departure Headway (Hd) | 4.908 | 4.78  | 5.074 | 5.11  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 726   | 743   | 701   | 695   |
| Service Time           | 2.987 | 2.86  | 3.159 | 3.197 |
| HCM Lane V/C Ratio     | 0.324 | 0.238 | 0.205 | 0.22  |
| HCM Control Delay      | 10.3  | 9.3   | 9.5   | 9.6   |
| HCM Lane LOS           | B     | A     | A     | A     |
| HCM 95th-tile Q        | 1.4   | 0.9   | 0.8   | 0.8   |



5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2022 Existing - no adjustments

Weekday AM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 71                                                                                | 96                                                                                | 74                                                                                | 73                                                                                | 42                                                                                | 35                                                                                | 1692                                                                               | 233                                                                                 | 41                                                                                  | 546                                                                                 |
| v/c Ratio               | 0.68                                                                              | 0.69                                                                              | 0.67                                                                              | 0.67                                                                              | 0.14                                                                              | 0.39                                                                              | 0.72                                                                               | 0.19                                                                                | 0.44                                                                                | 0.23                                                                                |
| Control Delay           | 93.8                                                                              | 61.3                                                                              | 91.5                                                                              | 90.3                                                                              | 4.1                                                                               | 76.4                                                                              | 18.7                                                                               | 0.7                                                                                 | 78.5                                                                                | 10.1                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 93.8                                                                              | 61.3                                                                              | 91.5                                                                              | 90.3                                                                              | 4.1                                                                               | 76.4                                                                              | 18.7                                                                               | 0.7                                                                                 | 78.5                                                                                | 10.1                                                                                |
| Queue Length 50th (ft)  | 64                                                                                | 48                                                                                | 69                                                                                | 70                                                                                | 0                                                                                 | 31                                                                                | 538                                                                                | 0                                                                                   | 37                                                                                  | 103                                                                                 |
| Queue Length 95th (ft)  | 102                                                                               | 90                                                                                | #133                                                                              | #137                                                                              | 12                                                                                | 65                                                                                | 595                                                                                | 8                                                                                   | 74                                                                                  | 130                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 115                                                                               | 149                                                                               | 128                                                                               | 125                                                                               | 292                                                                               | 113                                                                               | 2352                                                                               | 1236                                                                                | 113                                                                                 | 2326                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.62                                                                              | 0.64                                                                              | 0.58                                                                              | 0.58                                                                              | 0.14                                                                              | 0.31                                                                              | 0.72                                                                               | 0.19                                                                                | 0.36                                                                                | 0.23                                                                                |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Weekday AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 55                                                                                | 30                                                                                | 45                                                                                | 115                                                                               | 20                                                                                | 45                                                                                | 30                                                                                  | 1455                                                                                | 200                                                                                 | 35                                                                                  | 425                                                                                 | 45                                                                                  |
| Future Volume (vph)               | 55                                                                                | 30                                                                                | 45                                                                                | 115                                                                               | 20                                                                                | 45                                                                                | 30                                                                                  | 1455                                                                                | 200                                                                                 | 35                                                                                  | 425                                                                                 | 45                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.91                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1719                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3482                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1719                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3482                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.78                                                                              | 0.78                                                                              | 0.78                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Adj. Flow (vph)                   | 71                                                                                | 38                                                                                | 58                                                                                | 121                                                                               | 21                                                                                | 47                                                                                | 35                                                                                  | 1692                                                                                | 233                                                                                 | 41                                                                                  | 494                                                                                 | 52                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 35                                                                                | 0                                                                                   | 0                                                                                   | 64                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 71                                                                                | 56                                                                                | 0                                                                                 | 74                                                                                | 71                                                                                | 7                                                                                 | 35                                                                                  | 1692                                                                                | 169                                                                                 | 41                                                                                  | 541                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 8.3                                                                               | 8.3                                                                               |                                                                                   | 9.5                                                                               | 9.5                                                                               | 21.9                                                                              | 6.1                                                                                 | 91.8                                                                                | 101.3                                                                               | 6.4                                                                                 | 92.1                                                                                |                                                                                     |
| Effective Green, g (s)            | 8.3                                                                               | 8.3                                                                               |                                                                                   | 9.5                                                                               | 9.5                                                                               | 21.9                                                                              | 6.1                                                                                 | 91.8                                                                                | 101.3                                                                               | 6.4                                                                                 | 92.1                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.07                                                                              | 0.07                                                                              | 0.16                                                                              | 0.04                                                                                | 0.66                                                                                | 0.72                                                                                | 0.05                                                                                | 0.66                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 106                                                                               | 101                                                                               |                                                                                   | 110                                                                               | 107                                                                               | 228                                                                               | 77                                                                                  | 2320                                                                                | 1145                                                                                | 80                                                                                  | 2290                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.04                                                                             | 0.03                                                                              |                                                                                   | c0.05                                                                             | 0.05                                                                              | 0.00                                                                              | 0.02                                                                                | c0.48                                                                               | 0.11                                                                                | c0.02                                                                               | 0.16                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.67                                                                              | 0.56                                                                              |                                                                                   | 0.67                                                                              | 0.66                                                                              | 0.03                                                                              | 0.45                                                                                | 0.73                                                                                | 0.15                                                                                | 0.51                                                                                | 0.24                                                                                |                                                                                     |
| Uniform Delay, d1                 | 64.5                                                                              | 64.1                                                                              |                                                                                   | 63.7                                                                              | 63.7                                                                              | 50.0                                                                              | 65.3                                                                                | 15.9                                                                                | 6.0                                                                                 | 65.3                                                                                | 9.7                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 11.7                                                                              | 3.8                                                                               |                                                                                   | 12.0                                                                              | 11.4                                                                              | 0.0                                                                               | 1.5                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 2.3                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         | 76.3                                                                              | 67.8                                                                              |                                                                                   | 75.7                                                                              | 75.1                                                                              | 50.1                                                                              | 66.9                                                                                | 18.0                                                                                | 6.0                                                                                 | 67.6                                                                                | 9.9                                                                                 |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 71.4                                                                              |                                                                                   |                                                                                   | 69.8                                                                              |                                                                                   |                                                                                     | 17.4                                                                                |                                                                                     |                                                                                     | 14.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 23.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.71                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 63.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing - no adjustments  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 93                                                                                | 15                                                                                | 17                                                                                | 15                                                                                | 93                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 66.4%                                                                             | 10.7%                                                                             | 12.1%                                                                             | 10.7%                                                                             | 66.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 20                                                                                | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                |
| End Time (s)           | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Local Start Time (s)   | 38                                                                                | 53                                                                                | 6                                                                                 | 21                                                                                | 38                                                                                | 53                                                                                |
| Local Yield (s)        | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 90  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 93 s                                                                                       | 15 s                                                                                     | 17 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 93 s                                                                                       |                                                                                          |                                                                                          |

|                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Intersection             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Int Delay, s/veh         | 1.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 0                                                                                 | 150                                                                               | 325                                                                               | 1875                                                                              | 0                                                                                 | 50                                                                                |
| Future Vol, veh/h        | 0                                                                                 | 150                                                                               | 325                                                                               | 1875                                                                              | 0                                                                                 | 50                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 72                                                                                | 72                                                                                | 89                                                                                | 89                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 4                                                                                 | 4                                                                                 |
| Mvmt Flow                | 0                                                                                 | 208                                                                               | 365                                                                               | 2107                                                                              | 0                                                                                 | 54                                                                                |
| Major/Minor              | Minor2                                                                            | Major1                                                                            |                                                                                   | Major2                                                                            |                                                                                   |                                                                                   |
| Conflicting Flow All     | 1811                                                                              | 27                                                                                | 54                                                                                | 0                                                                                 | -                                                                                 | 0                                                                                 |
| Stage 1                  | 27                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Stage 2                  | 1784                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Critical Hdwy            | 6.82                                                                              | 6.92                                                                              | 4.14                                                                              | -                                                                                 | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 1      | 5.82                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2      | 5.82                                                                              | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Follow-up Hdwy           | 3.51                                                                              | 3.31                                                                              | 2.22                                                                              | -                                                                                 | -                                                                                 | -                                                                                 |
| Pot Cap-1 Maneuver       | 71                                                                                | 1045                                                                              | 1549                                                                              | -                                                                                 | -                                                                                 | -                                                                                 |
| Stage 1                  | 995                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Stage 2                  | 121                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Platoon blocked, %       |                                                                                   |                                                                                   |                                                                                   | -                                                                                 | -                                                                                 | -                                                                                 |
| Mov Cap-1 Maneuver       | 54                                                                                | 1045                                                                              | 1549                                                                              | -                                                                                 | -                                                                                 | -                                                                                 |
| Mov Cap-2 Maneuver       | 54                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Stage 1                  | 760                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Stage 2                  | 121                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| Approach                 | EB                                                                                | NB                                                                                |                                                                                   | SB                                                                                |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 9.3                                                                               | 1.2                                                                               |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   |
| HCM LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | NBL                                                                               | NBT                                                                               | EBLn1                                                                             | EBLn2                                                                             | SBT                                                                               | SBR                                                                               |
| Capacity (veh/h)         | 1549                                                                              | -                                                                                 | -                                                                                 | 1045                                                                              | -                                                                                 | -                                                                                 |
| HCM Lane V/C Ratio       | 0.236                                                                             | -                                                                                 | -                                                                                 | 0.199                                                                             | -                                                                                 | -                                                                                 |
| HCM Control Delay (s)    | 8                                                                                 | -                                                                                 | 0                                                                                 | 9.3                                                                               | -                                                                                 | -                                                                                 |
| HCM Lane LOS             | A                                                                                 | -                                                                                 | A                                                                                 | A                                                                                 | -                                                                                 | -                                                                                 |
| HCM 95th %tile Q(veh)    | 0.9                                                                               | -                                                                                 | -                                                                                 | 0.7                                                                               | -                                                                                 | -                                                                                 |



Intersection

Int Delay, s/veh 7.1

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 1                                                                                 | 55   | 3                                                                                 | 3    | 70   | 5                                                                                 |
| Future Vol, veh/h        | 1                                                                                 | 55   | 3                                                                                 | 3    | 70   | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 81                                                                                | 81   | 50                                                                                | 50   | 73   | 73                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 1                                                                                 | 68   | 6                                                                                 | 6    | 96   | 7                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 208    | 12     | 0      |
| Stage 1              | 9      | -      | -      |
| Stage 2              | 199    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 780    | 1069   | -      |
| Stage 1              | 1014   | -      | -      |
| Stage 2              | 835    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 734    | 1066   | -      |
| Mov Cap-2 Maneuver   | 734    | -      | -      |
| Stage 1              | 1014   | -      | -      |
| Stage 2              | 786    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.6 | 0  | 6.9 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1057  | 1620  |
| HCM Lane V/C Ratio    | -   | -        | 0.065 | 0.059 |
| HCM Control Delay (s) | -   | -        | 8.6   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.2   | 0.2   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing - no adjustments  
Weekday PM

Intersection

| Int Delay, s/veh         | 1.8                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 25                                                                                | 2    | 15                                                                                | 45   | 2    | 35                                                                                |
| Future Vol, veh/h        | 25                                                                                | 2    | 15                                                                                | 45   | 2    | 35                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 30                                                                                | 2    | 25                                                                                | 76   | 3    | 44                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 113    | 63     | 0      |
| Stage 1              | 63     | -      | -      |
| Stage 2              | 50     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 888    | 1007   | -      |
| Stage 1              | 965    | -      | -      |
| Stage 2              | 978    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 886    | 1007   | -      |
| Mov Cap-2 Maneuver   | 886    | -      | -      |
| Stage 1              | 965    | -      | -      |
| Stage 2              | 976    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.2 | 0  | 0.4 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 894   | 1504  |
| HCM Lane V/C Ratio    | -   | -        | 0.037 | 0.002 |
| HCM Control Delay (s) | -   | -        | 9.2   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |

3: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

2022 Existing - no adjustments  
Weekday PM

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 1    | 1    | 105                                                                               | 250                                                                               | 30   |
| Future Vol, veh/h        | 10                                                                                | 1    | 1    | 105                                                                               | 250                                                                               | 30   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 56                                                                                | 56   | 97   | 97                                                                                | 75                                                                                | 75   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 18                                                                                | 2    | 1    | 108                                                                               | 333                                                                               | 40   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 464 | 354 | 374   | 0 | - | 0 |
| Stage 1              | 354 | -   | -     | - | - | - |
| Stage 2              | 110 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.16  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.254 | - | - | - |
| Pot Cap-1 Maneuver   | 560 | 694 | 1163  | - | - | - |
| Stage 1              | 715 | -   | -     | - | - | - |
| Stage 2              | 920 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 558 | 693 | 1162  | - | - | - |
| Mov Cap-2 Maneuver   | 558 | -   | -     | - | - | - |
| Stage 1              | 714 | -   | -     | - | - | - |
| Stage 2              | 919 | -   | -     | - | - | - |

Approach EB NB SB

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 11.6 | 0.1 | 0 |
| HCM LOS              | B    |     |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1162  | - | 568   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.035 | - | - |
| HCM Control Delay (s) | 8.1   | 0 | 11.6  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.1   | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing - no adjustments  
Weekday PM

Intersection

Intersection Delay, s/veh 10.1  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 2    | 15                                                                                | 30   | 90   | 5                                                                                 | 20   | 15   | 80                                                                                  | 55   | 10   | 225                                                                                 | 3    |
| Future Vol, veh/h          | 2    | 15                                                                                | 30   | 90   | 5                                                                                 | 20   | 15   | 80                                                                                  | 55   | 10   | 225                                                                                 | 3    |
| Peak Hour Factor           | 0.45 | 0.45                                                                              | 0.45 | 0.95 | 0.95                                                                              | 0.95 | 0.77 | 0.77                                                                                | 0.77 | 0.76 | 0.76                                                                                | 0.76 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 4    | 33                                                                                | 67   | 95   | 5                                                                                 | 21   | 19   | 104                                                                                 | 71   | 13   | 296                                                                                 | 4    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 8.8  |                                                                                   |      | 9.6  |                                                                                   |      | 9.4  |                                                                                     |      | 11.2 |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | A    |                                                                                   |      | A    |                                                                                     |      | B    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 10%   | 4%    | 78%   | 4%    |
| Vol Thru, %            | 53%   | 32%   | 4%    | 95%   |
| Vol Right, %           | 37%   | 64%   | 17%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 150   | 47    | 115   | 238   |
| LT Vol                 | 15    | 2     | 90    | 10    |
| Through Vol            | 80    | 15    | 5     | 225   |
| RT Vol                 | 55    | 30    | 20    | 3     |
| Lane Flow Rate         | 195   | 104   | 121   | 313   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.255 | 0.142 | 0.179 | 0.413 |
| Departure Headway (Hd) | 4.716 | 4.89  | 5.313 | 4.752 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 754   | 725   | 668   | 752   |
| Service Time           | 2.79  | 2.976 | 3.398 | 2.818 |
| HCM Lane V/C Ratio     | 0.259 | 0.143 | 0.181 | 0.416 |
| HCM Control Delay      | 9.4   | 8.8   | 9.6   | 11.2  |
| HCM Lane LOS           | A     | A     | A     | B     |
| HCM 95th-tile Q        | 1     | 0.5   | 0.6   | 2     |



5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2022 Existing - no adjustments  
Weekday PM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 36                                                                                | 78                                                                                | 116                                                                               | 116                                                                               | 42                                                                                | 11                                                                                | 564                                                                                 | 96                                                                                  | 41                                                                                  | 1402                                                                                |
| v/c Ratio               | 0.37                                                                              | 0.55                                                                              | 0.68                                                                              | 0.70                                                                              | 0.12                                                                              | 0.15                                                                              | 0.25                                                                                | 0.08                                                                                | 0.42                                                                                | 0.58                                                                                |
| Control Delay           | 73.7                                                                              | 38.9                                                                              | 79.3                                                                              | 81.5                                                                              | 3.2                                                                               | 69.2                                                                              | 13.3                                                                                | 0.8                                                                                 | 75.8                                                                                | 15.2                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 73.7                                                                              | 38.9                                                                              | 79.3                                                                              | 81.5                                                                              | 3.2                                                                               | 69.2                                                                              | 13.3                                                                                | 0.8                                                                                 | 75.8                                                                                | 15.2                                                                                |
| Queue Length 50th (ft)  | 32                                                                                | 21                                                                                | 109                                                                               | 113                                                                               | 0                                                                                 | 10                                                                                | 115                                                                                 | 0                                                                                   | 37                                                                                  | 283                                                                                 |
| Queue Length 95th (ft)  | 63                                                                                | 64                                                                                | 164                                                                               | 171                                                                               | 9                                                                                 | 32                                                                                | 188                                                                                 | 8                                                                                   | 76                                                                                  | 564                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 179                                                                               | 218                                                                               | 261                                                                               | 252                                                                               | 377                                                                               | 114                                                                               | 2257                                                                                | 1265                                                                                | 140                                                                                 | 2417                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.20                                                                              | 0.36                                                                              | 0.44                                                                              | 0.46                                                                              | 0.11                                                                              | 0.10                                                                              | 0.25                                                                                | 0.08                                                                                | 0.29                                                                                | 0.58                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Weekday PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 30                                                                                | 20                                                                                | 45                                                                                | 185                                                                               | 10                                                                                | 40                                                                                | 10                                                                                  | 530                                                                                 | 90                                                                                  | 40                                                                                  | 1330                                                                                | 30                                                                                  |
| Future Volume (vph)               | 30                                                                                | 20                                                                                | 45                                                                                | 185                                                                               | 10                                                                                | 40                                                                                | 10                                                                                  | 530                                                                                 | 90                                                                                  | 40                                                                                  | 1330                                                                                | 30                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1694                                                                              |                                                                                   | 1663                                                                              | 1598                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3561                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1694                                                                              |                                                                                   | 1663                                                                              | 1598                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3561                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 36                                                                                | 24                                                                                | 54                                                                                | 215                                                                               | 12                                                                                | 47                                                                                | 11                                                                                  | 564                                                                                 | 96                                                                                  | 41                                                                                  | 1371                                                                                | 31                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 51                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 34                                                                                | 0                                                                                   | 0                                                                                   | 26                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 36                                                                                | 27                                                                                | 0                                                                                 | 116                                                                               | 115                                                                               | 8                                                                                 | 11                                                                                  | 564                                                                                 | 70                                                                                  | 41                                                                                  | 1401                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 7.6                                                                               | 7.6                                                                               |                                                                                   | 14.4                                                                              | 14.4                                                                              | 27.1                                                                              | 2.6                                                                                 | 87.3                                                                                | 101.7                                                                               | 6.7                                                                                 | 91.4                                                                                |                                                                                     |
| Effective Green, g (s)            | 7.6                                                                               | 7.6                                                                               |                                                                                   | 14.4                                                                              | 14.4                                                                              | 27.1                                                                              | 2.6                                                                                 | 87.3                                                                                | 101.7                                                                               | 6.7                                                                                 | 91.4                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.05                                                                              | 0.05                                                                              |                                                                                   | 0.10                                                                              | 0.10                                                                              | 0.19                                                                              | 0.02                                                                                | 0.62                                                                                | 0.73                                                                                | 0.05                                                                                | 0.65                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 97                                                                                | 91                                                                                |                                                                                   | 171                                                                               | 164                                                                               | 288                                                                               | 33                                                                                  | 2228                                                                                | 1161                                                                                | 85                                                                                  | 2324                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.02                                                                             | 0.02                                                                              |                                                                                   | 0.07                                                                              | c0.07                                                                             | 0.01                                                                              | 0.01                                                                                | 0.16                                                                                | 0.04                                                                                | c0.02                                                                               | c0.39                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.37                                                                              | 0.30                                                                              |                                                                                   | 0.68                                                                              | 0.70                                                                              | 0.03                                                                              | 0.33                                                                                | 0.25                                                                                | 0.06                                                                                | 0.48                                                                                | 0.60                                                                                |                                                                                     |
| Uniform Delay, d1                 | 63.9                                                                              | 63.6                                                                              |                                                                                   | 60.6                                                                              | 60.7                                                                              | 45.8                                                                              | 67.8                                                                                | 11.8                                                                                | 5.5                                                                                 | 65.0                                                                                | 13.9                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 0.9                                                                               | 0.7                                                                               |                                                                                   | 8.1                                                                               | 10.5                                                                              | 0.0                                                                               | 2.2                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 1.6                                                                                 | 1.2                                                                                 |                                                                                     |
| Delay (s)                         | 64.8                                                                              | 64.3                                                                              |                                                                                   | 68.7                                                                              | 71.3                                                                              | 45.8                                                                              | 70.0                                                                                | 12.1                                                                                | 5.5                                                                                 | 66.5                                                                                | 15.1                                                                                |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 64.4                                                                              |                                                                                   |                                                                                   | 66.3                                                                              |                                                                                   |                                                                                     | 12.1                                                                                |                                                                                     |                                                                                     | 16.5                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 23.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.61                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 60.2%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing - no adjustments  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 77                                                                                | 20                                                                                | 28                                                                                | 17                                                                                | 75                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 55.0%                                                                             | 14.3%                                                                             | 20.0%                                                                             | 12.1%                                                                             | 53.6%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 36                                                                                | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                |
| End Time (s)           | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Local Start Time (s)   | 54                                                                                | 69                                                                                | 6                                                                                 | 26                                                                                | 54                                                                                | 71                                                                                |
| Local Yield (s)        | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 90  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 77 s                                                                                       | 20 s                                                                                     | 28 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 75 s                                                                                       |                                                                                          |                                                                                          |

6: Route 120 & Evans Dr  
HCM 6th TWSC

2022 Existing - no adjustments  
Weekday PM

Intersection

Int Delay, s/veh 2.9

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |  |  |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 110                                                                               | 65                                                                                | 795                                                                               | 1975                                                                              | 10   |
| Future Vol, veh/h        | 5                                                                                 | 110                                                                               | 65                                                                                | 795                                                                               | 1975                                                                              | 10   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 86                                                                                | 86                                                                                | 98                                                                                | 98                                                                                | 93                                                                                | 93   |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1    |
| Mvmt Flow                | 6                                                                                 | 128                                                                               | 66                                                                                | 811                                                                               | 2124                                                                              | 11   |

Major/Minor Minor2 Major1 Major2

|                      |      |      |      |   |   |   |
|----------------------|------|------|------|---|---|---|
| Conflicting Flow All | 2669 | 1069 | 2136 | 0 | - | 0 |
| Stage 1              | 2131 | -    | -    | - | - | - |
| Stage 2              | 538  | -    | -    | - | - | - |
| Critical Hdwy        | 6.8  | 6.9  | 4.14 | - | - | - |
| Critical Hdwy Stg 1  | 5.8  | -    | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.8  | -    | -    | - | - | - |
| Follow-up Hdwy       | 3.5  | 3.3  | 2.22 | - | - | - |
| Pot Cap-1 Maneuver   | 19   | 221  | 250  | - | - | - |
| Stage 1              | 79   | -    | -    | - | - | - |
| Stage 2              | 555  | -    | -    | - | - | - |
| Platoon blocked, %   |      |      |      | - | - | - |
| Mov Cap-1 Maneuver   | 14   | 221  | 250  | - | - | - |
| Mov Cap-2 Maneuver   | 14   | -    | -    | - | - | - |
| Stage 1              | 58   | -    | -    | - | - | - |
| Stage 2              | 554  | -    | -    | - | - | - |

Approach EB NB SB

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 56.5 | 1.9 | 0 |
| HCM LOS              | F    |     |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

|                       |       |   |       |       |   |   |
|-----------------------|-------|---|-------|-------|---|---|
| Capacity (veh/h)      | 250   | - | 14    | 221   | - | - |
| HCM Lane V/C Ratio    | 0.265 | - | 0.415 | 0.579 | - | - |
| HCM Control Delay (s) | 24.5  | - | 386.2 | 41.5  | - | - |
| HCM Lane LOS          | C     | - | F     | E     | - | - |
| HCM 95th %tile Q(veh) | 1     | - | 1.1   | 3.2   | - | - |



Intersection

| Int Delay, s/veh         | 7.3                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 25   | 0                                                                                 | 1    | 15   | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 25   | 0                                                                                 | 1    | 15   | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 9    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 67                                                                                | 67   | 25                                                                                | 25   | 64   | 64                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 37   | 0                                                                                 | 4    | 23   | 2                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 50     | 11     | 0      |
| Stage 1              | 2      | -      | -      |
| Stage 2              | 48     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 964    | 1076   | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 980    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 951    | 1067   | -      |
| Mov Cap-2 Maneuver   | 951    | -      | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 966    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.5 | 0  | 6.8 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1067  | 1631  |
| HCM Lane V/C Ratio    | -   | -        | 0.035 | 0.014 |
| HCM Control Delay (s) | -   | -        | 8.5   | 7.2   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

|                          |                                                                                   |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1                                                                                 |      |                                                                                   |      |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 0    | 15                                                                                | 10   | 0    | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 0    | 15                                                                                | 10   | 0    | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 63                                                                                | 63   | 72                                                                                | 72   | 58   | 58                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 8                                                                                 | 0    | 21                                                                                | 14   | 0    | 26                                                                                |

|                      |        |        |   |        |      |
|----------------------|--------|--------|---|--------|------|
| Major/Minor          | Minor1 | Major1 |   | Major2 |      |
| Conflicting Flow All | 54     | 30     | 0 | 0      | 35   |
| Stage 1              | 28     | -      | - | -      | -    |
| Stage 2              | 26     | -      | - | -      | -    |
| Critical Hdwy        | 6.4    | 6.2    | - | -      | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | - | -      | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | - | -      | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | - | -      | 2.2  |
| Pot Cap-1 Maneuver   | 959    | 1050   | - | -      | 1589 |
| Stage 1              | 1000   | -      | - | -      | -    |
| Stage 2              | 1002   | -      | - | -      | -    |
| Platoon blocked, %   |        |        | - | -      | -    |
| Mov Cap-1 Maneuver   | 959    | 1048   | - | -      | 1589 |
| Mov Cap-2 Maneuver   | 959    | -      | - | -      | -    |
| Stage 1              | 1000   | -      | - | -      | -    |
| Stage 2              | 1002   | -      | - | -      | -    |

|                      |     |    |    |
|----------------------|-----|----|----|
| Approach             | WB  | NB | SB |
| HCM Control Delay, s | 8.8 | 0  | 0  |
| HCM LOS              | A   |    |    |

|                       |     |          |       |      |
|-----------------------|-----|----------|-------|------|
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
| Capacity (veh/h)      | -   | -        | 959   | 1589 |
| HCM Lane V/C Ratio    | -   | -        | 0.008 | -    |
| HCM Control Delay (s) | -   | -        | 8.8   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |

3: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Int Delay, s/veh 0.7

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 0    | 0    | 50                                                                                | 65                                                                                | 10   |
| Future Vol, veh/h        | 10                                                                                | 0    | 0    | 50                                                                                | 65                                                                                | 10   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 75                                                                                | 75   | 64   | 64                                                                                | 89                                                                                | 89   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 13                                                                                | 0    | 0    | 78                                                                                | 73                                                                                | 11   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |      |   |   |   |
|----------------------|-----|-----|------|---|---|---|
| Conflicting Flow All | 160 | 82  | 84   | 0 | - | 0 |
| Stage 1              | 79  | -   | -    | - | - | - |
| Stage 2              | 81  | -   | -    | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.1  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.2  | - | - | - |
| Pot Cap-1 Maneuver   | 836 | 983 | 1526 | - | - | - |
| Stage 1              | 949 | -   | -    | - | - | - |
| Stage 2              | 947 | -   | -    | - | - | - |
| Platoon blocked, %   |     |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 836 | 980 | 1526 | - | - | - |
| Mov Cap-2 Maneuver   | 836 | -   | -    | - | - | - |
| Stage 1              | 949 | -   | -    | - | - | - |
| Stage 2              | 947 | -   | -    | - | - | - |

Approach EB NB SB

|                      |     |   |   |
|----------------------|-----|---|---|
| HCM Control Delay, s | 9.4 | 0 | 0 |
| HCM LOS              | A   |   |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |      |   |       |   |   |
|-----------------------|------|---|-------|---|---|
| Capacity (veh/h)      | 1526 | - | 836   | - | - |
| HCM Lane V/C Ratio    | -    | - | 0.016 | - | - |
| HCM Control Delay (s) | 0    | - | 9.4   | - | - |
| HCM Lane LOS          | A    | - | A     | - | - |
| HCM 95th %tile Q(veh) | 0    | - | 0     | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Intersection Delay, s/veh 7.6  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 10                                                                                | 3    | 50   | 2                                                                                 | 10   | 2    | 45                                                                                  | 25   | 2    | 60                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 10                                                                                | 3    | 50   | 2                                                                                 | 10   | 2    | 45                                                                                  | 25   | 2    | 60                                                                                  | 0    |
| Peak Hour Factor    | 0.60 | 0.60                                                                              | 0.60 | 0.82 | 0.82                                                                              | 0.82 | 0.74 | 0.74                                                                                | 0.74 | 0.88 | 0.88                                                                                | 0.88 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 17                                                                                | 5    | 61   | 2                                                                                 | 12   | 3    | 61                                                                                  | 34   | 2    | 68                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 7.3 | 7.8 | 7.5 | 7.6 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 3%    | 0%    | 81%   | 3%    |
| Vol Thru, %            | 62%   | 77%   | 3%    | 97%   |
| Vol Right, %           | 35%   | 23%   | 16%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 72    | 13    | 62    | 62    |
| LT Vol                 | 2     | 0     | 50    | 2     |
| Through Vol            | 45    | 10    | 2     | 60    |
| RT Vol                 | 25    | 3     | 10    | 0     |
| Lane Flow Rate         | 97    | 22    | 76    | 70    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.106 | 0.025 | 0.09  | 0.081 |
| Departure Headway (Hd) | 3.919 | 4.11  | 4.27  | 4.149 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 903   | 856   | 829   | 853   |
| Service Time           | 1.992 | 2.205 | 2.348 | 2.224 |
| HCM Lane V/C Ratio     | 0.107 | 0.026 | 0.092 | 0.082 |
| HCM Control Delay      | 7.5   | 7.3   | 7.8   | 7.6   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.1   | 0.3   | 0.3   |



5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2022 Existing - no adjustments

Sat MIDDAY

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 13                                                                                | 20                                                                                | 45                                                                                | 45                                                                                | 21                                                                                | 6                                                                                 | 472                                                                                | 72                                                                                  | 26                                                                                  | 427                                                                                 |
| v/c Ratio               | 0.18                                                                              | 0.24                                                                              | 0.46                                                                              | 0.48                                                                              | 0.08                                                                              | 0.09                                                                              | 0.18                                                                               | 0.05                                                                                | 0.31                                                                                | 0.15                                                                                |
| Control Delay           | 69.7                                                                              | 43.5                                                                              | 77.6                                                                              | 77.6                                                                              | 0.6                                                                               | 67.6                                                                              | 7.8                                                                                | 0.7                                                                                 | 73.2                                                                                | 5.2                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 69.7                                                                              | 43.5                                                                              | 77.6                                                                              | 77.6                                                                              | 0.6                                                                               | 67.6                                                                              | 7.8                                                                                | 0.7                                                                                 | 73.2                                                                                | 5.2                                                                                 |
| Queue Length 50th (ft)  | 12                                                                                | 6                                                                                 | 42                                                                                | 43                                                                                | 0                                                                                 | 5                                                                                 | 76                                                                                 | 0                                                                                   | 23                                                                                  | 45                                                                                  |
| Queue Length 95th (ft)  | 29                                                                                | 27                                                                                | 84                                                                                | 86                                                                                | 0                                                                                 | 21                                                                                | 120                                                                                | 6                                                                                   | 56                                                                                  | 101                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 215                                                                               | 216                                                                               | 265                                                                               | 254                                                                               | 379                                                                               | 167                                                                               | 2620                                                                               | 1445                                                                                | 216                                                                                 | 2787                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.06                                                                              | 0.09                                                                              | 0.17                                                                              | 0.18                                                                              | 0.06                                                                              | 0.04                                                                              | 0.18                                                                               | 0.05                                                                                | 0.12                                                                                | 0.15                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

2022 Existing - no adjustments

Sat MIDDAY

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 10                                                                                | 5                                                                                 | 10                                                                                | 75                                                                                | 3                                                                                 | 20                                                                                | 5                                                                                   | 425                                                                                 | 65                                                                                  | 25                                                                                  | 400                                                                                 | 10                                                                                  |
| Future Volume (vph)               | 10                                                                                | 5                                                                                 | 10                                                                                | 75                                                                                | 3                                                                                 | 20                                                                                | 5                                                                                   | 425                                                                                 | 65                                                                                  | 25                                                                                  | 400                                                                                 | 10                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.90                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 1689                                                                              |                                                                                   | 1615                                                                              | 1549                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3560                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 1689                                                                              |                                                                                   | 1615                                                                              | 1549                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3560                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.75                                                                              | 0.75                                                                              | 0.75                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 13                                                                                | 7                                                                                 | 13                                                                                | 85                                                                                | 3                                                                                 | 23                                                                                | 6                                                                                   | 472                                                                                 | 72                                                                                  | 26                                                                                  | 417                                                                                 | 10                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 18                                                                                | 0                                                                                   | 0                                                                                   | 17                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 13                                                                                | 7                                                                                 | 0                                                                                 | 45                                                                                | 44                                                                                | 3                                                                                 | 6                                                                                   | 472                                                                                 | 55                                                                                  | 26                                                                                  | 426                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 3%                                                                                | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 3.8                                                                               | 3.8                                                                               |                                                                                   | 8.5                                                                               | 8.5                                                                               | 20.2                                                                              | 1.2                                                                                 | 98.0                                                                                | 106.5                                                                               | 5.7                                                                                 | 102.5                                                                               |                                                                                     |
| Effective Green, g (s)            | 3.8                                                                               | 3.8                                                                               |                                                                                   | 8.5                                                                               | 8.5                                                                               | 20.2                                                                              | 1.2                                                                                 | 98.0                                                                                | 106.5                                                                               | 5.7                                                                                 | 102.5                                                                               |                                                                                     |
| Actuated g/C Ratio                | 0.03                                                                              | 0.03                                                                              |                                                                                   | 0.06                                                                              | 0.06                                                                              | 0.14                                                                              | 0.01                                                                                | 0.70                                                                                | 0.76                                                                                | 0.04                                                                                | 0.73                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 48                                                                                | 45                                                                                |                                                                                   | 98                                                                                | 94                                                                                | 208                                                                               | 15                                                                                  | 2527                                                                                | 1228                                                                                | 72                                                                                  | 2606                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                              |                                                                                   | 0.03                                                                              | c0.03                                                                             | 0.00                                                                              | 0.00                                                                                | c0.13                                                                               | 0.03                                                                                | c0.01                                                                               | c0.12                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.27                                                                              | 0.16                                                                              |                                                                                   | 0.46                                                                              | 0.47                                                                              | 0.01                                                                              | 0.40                                                                                | 0.19                                                                                | 0.04                                                                                | 0.36                                                                                | 0.16                                                                                |                                                                                     |
| Uniform Delay, d1                 | 66.7                                                                              | 66.5                                                                              |                                                                                   | 63.5                                                                              | 63.6                                                                              | 51.4                                                                              | 69.0                                                                                | 7.2                                                                                 | 4.1                                                                                 | 65.4                                                                                | 5.7                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 1.1                                                                               | 0.6                                                                               |                                                                                   | 1.2                                                                               | 1.3                                                                               | 0.0                                                                               | 6.3                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 1.1                                                                                 | 0.1                                                                                 |                                                                                     |
| Delay (s)                         | 67.9                                                                              | 67.2                                                                              |                                                                                   | 64.8                                                                              | 64.9                                                                              | 51.4                                                                              | 75.3                                                                                | 7.4                                                                                 | 4.2                                                                                 | 66.5                                                                                | 5.8                                                                                 |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 67.4                                                                              |                                                                                   |                                                                                   | 62.3                                                                              |                                                                                   |                                                                                     | 7.7                                                                                 |                                                                                     |                                                                                     | 9.3                                                                                 |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 15.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.22                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 39.8%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2022 Existing - no adjustments

Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 69                                                                                | 23                                                                                | 29                                                                                | 23                                                                                | 65                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 49.3%                                                                             | 16.4%                                                                             | 20.7%                                                                             | 16.4%                                                                             | 46.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 40                                                                                | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                |
| End Time (s)           | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Local Start Time (s)   | 58                                                                                | 77                                                                                | 6                                                                                 | 29                                                                                | 58                                                                                | 81                                                                                |
| Local Yield (s)        | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                         |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 69 s                                                                                       | 23 s                                                                                    | 29 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                         |                                                                                          |
| 23 s                                                                                   | 65 s                                                                                       |                                                                                         |                                                                                          |

6: Route 120 & Evans Dr  
HCM 6th TWSC

2022 Existing - no adjustments

Sat MIDDAY

Intersection

Int Delay, s/veh 0.4

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |  |  |  |  |      |
| Traffic Vol, veh/h       | 3                                                                                 | 25                                                                                | 25                                                                                | 640                                                                               | 635                                                                               | 5    |
| Future Vol, veh/h        | 3                                                                                 | 25                                                                                | 25                                                                                | 640                                                                               | 635                                                                               | 5    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 83                                                                                | 83                                                                                | 96                                                                                | 96                                                                                | 97                                                                                | 97   |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1    |
| Mvmt Flow                | 4                                                                                 | 30                                                                                | 26                                                                                | 667                                                                               | 655                                                                               | 5    |

Major/Minor Minor2 Major1 Major2

|                      |      |     |      |   |   |   |
|----------------------|------|-----|------|---|---|---|
| Conflicting Flow All | 1044 | 330 | 660  | 0 | - | 0 |
| Stage 1              | 658  | -   | -    | - | - | - |
| Stage 2              | 386  | -   | -    | - | - | - |
| Critical Hdwy        | 6.8  | 6.9 | 4.12 | - | - | - |
| Critical Hdwy Stg 1  | 5.8  | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.8  | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5  | 3.3 | 2.21 | - | - | - |
| Pot Cap-1 Maneuver   | 228  | 672 | 931  | - | - | - |
| Stage 1              | 482  | -   | -    | - | - | - |
| Stage 2              | 662  | -   | -    | - | - | - |
| Platoon blocked, %   |      |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 222  | 672 | 931  | - | - | - |
| Mov Cap-2 Maneuver   | 222  | -   | -    | - | - | - |
| Stage 1              | 469  | -   | -    | - | - | - |
| Stage 2              | 662  | -   | -    | - | - | - |

Approach EB NB SB

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 11.8 | 0.3 | 0 |
| HCM LOS              | B    |     |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

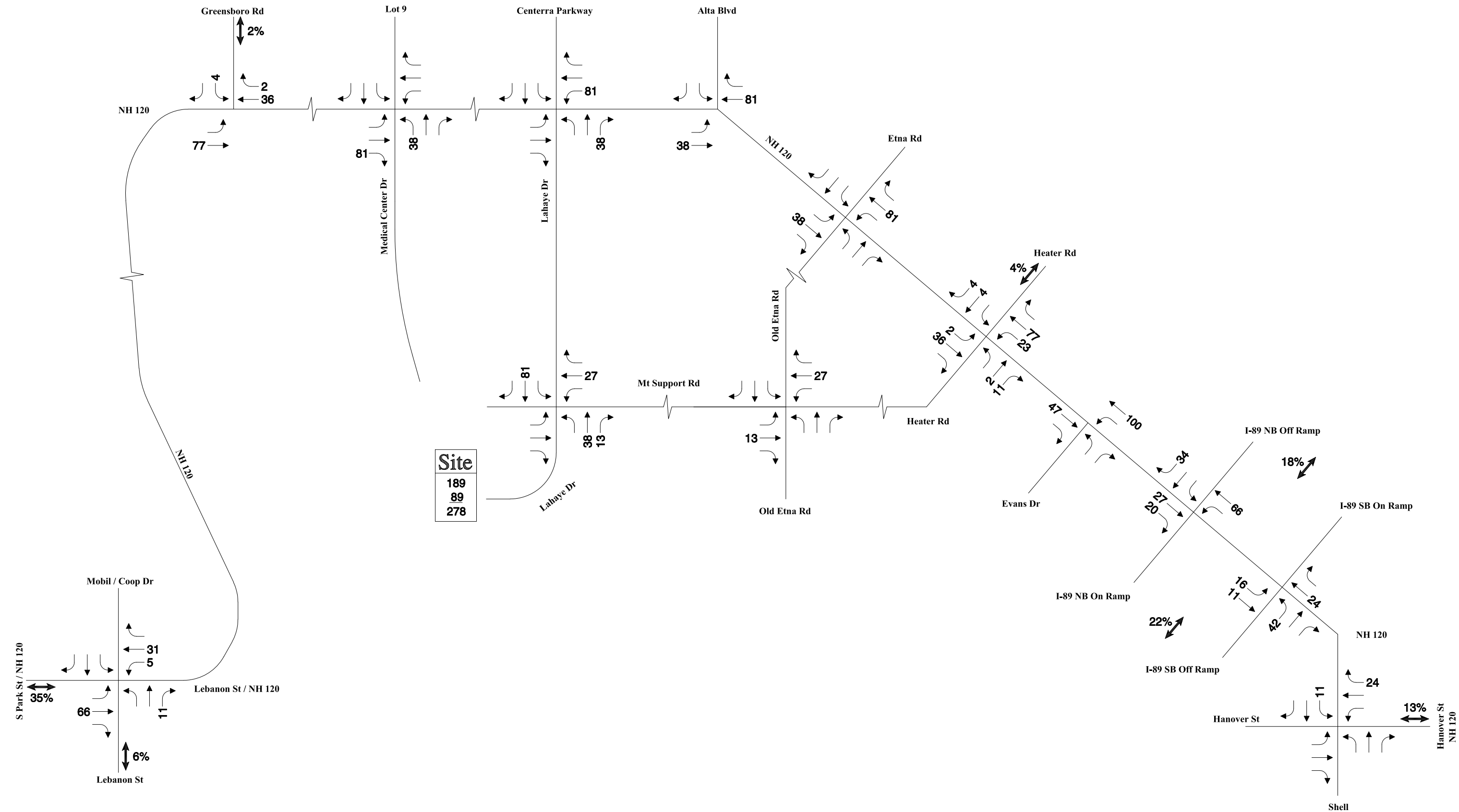
|                       |       |   |       |       |   |   |
|-----------------------|-------|---|-------|-------|---|---|
| Capacity (veh/h)      | 931   | - | 222   | 672   | - | - |
| HCM Lane V/C Ratio    | 0.028 | - | 0.016 | 0.045 | - | - |
| HCM Control Delay (s) | 9     | - | 21.5  | 10.6  | - | - |
| HCM Lane LOS          | A     | - | C     | B     | - | - |
| HCM 95th %tile Q(veh) | 0.1   | - | 0.1   | 0.1   | - | - |



## Background Developments

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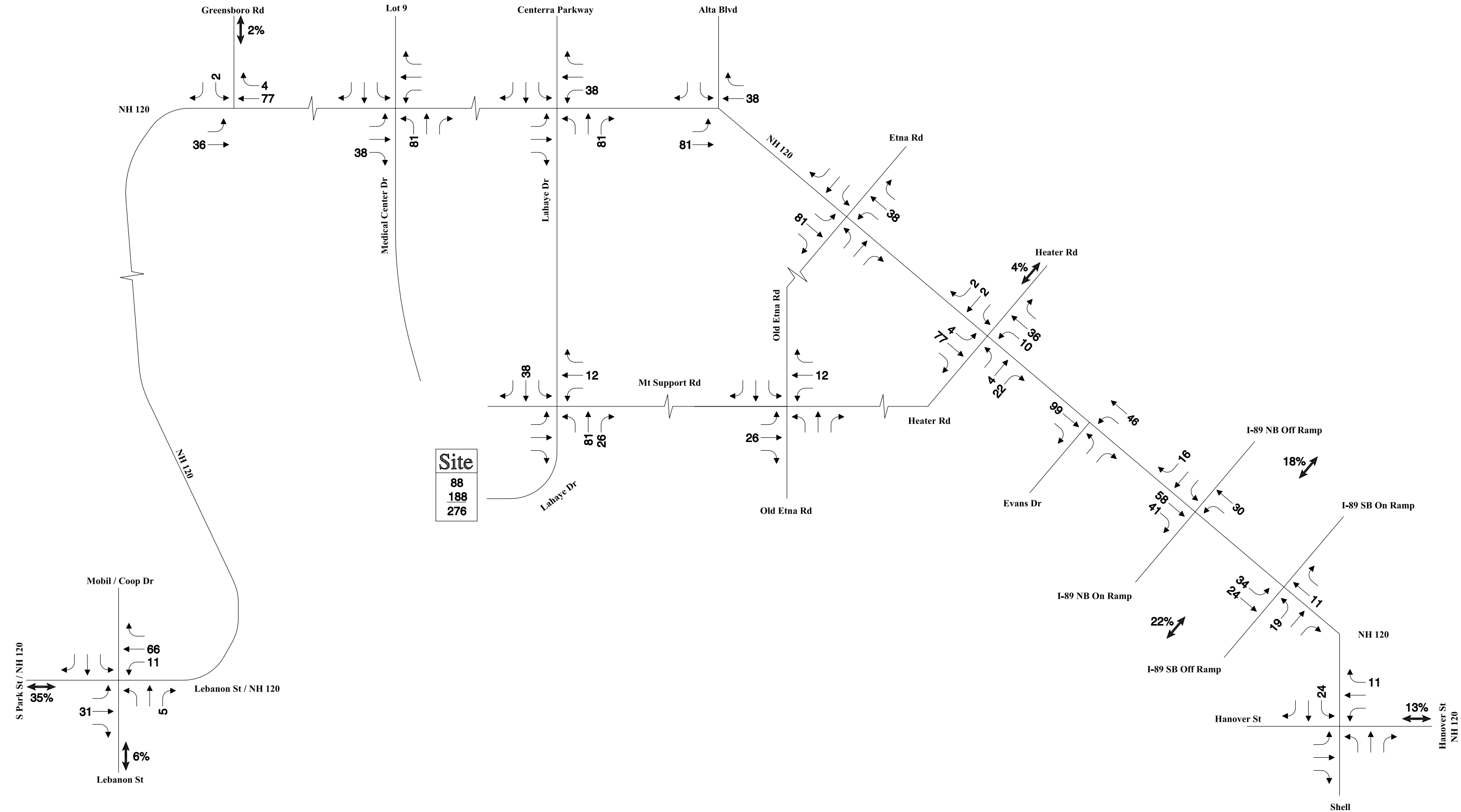


Not to Scale



Site Generated  
Weekday Morning  
Peak Hour Traffic Volumes  
DHMC Patient Care Tower Expansion

Figure 8



Not to Scale

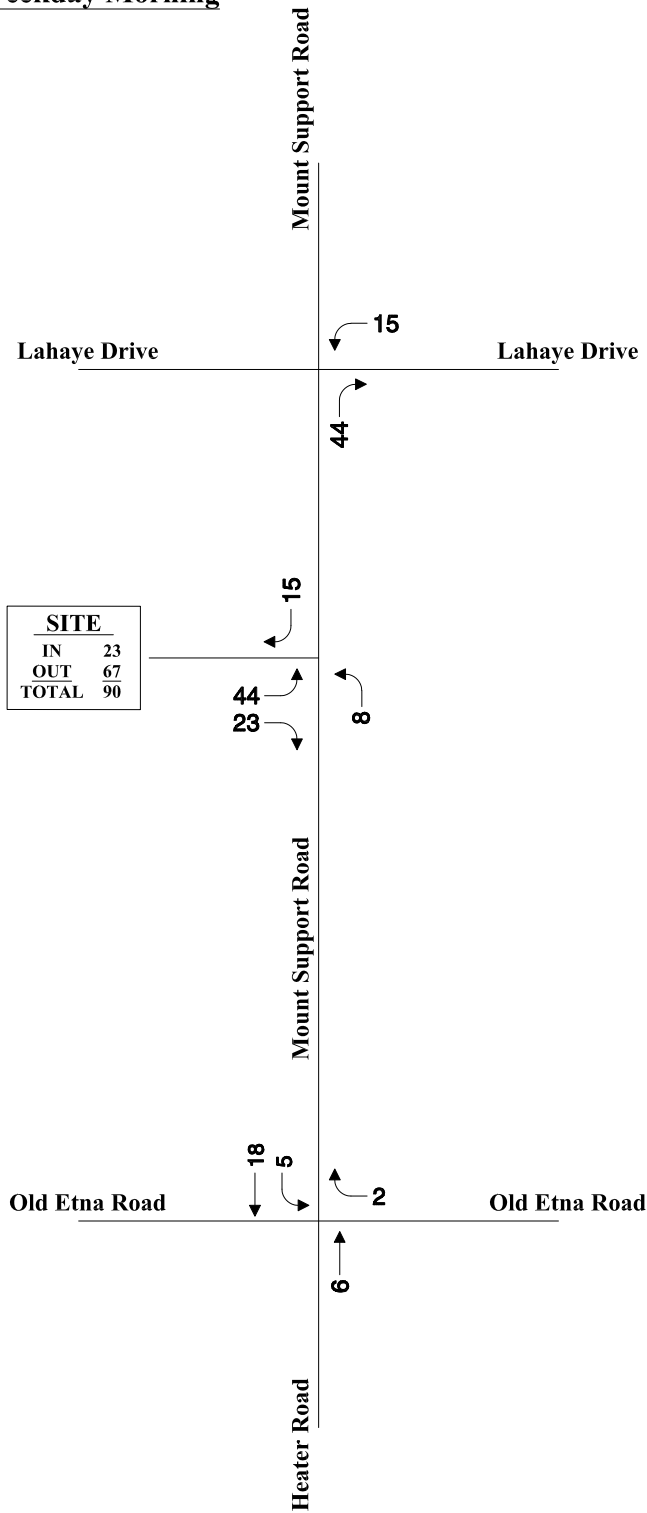


Site Generated  
Weekday Evening  
Peak Hour Traffic Volumes  
DHMC Patient Care Tower Expansion

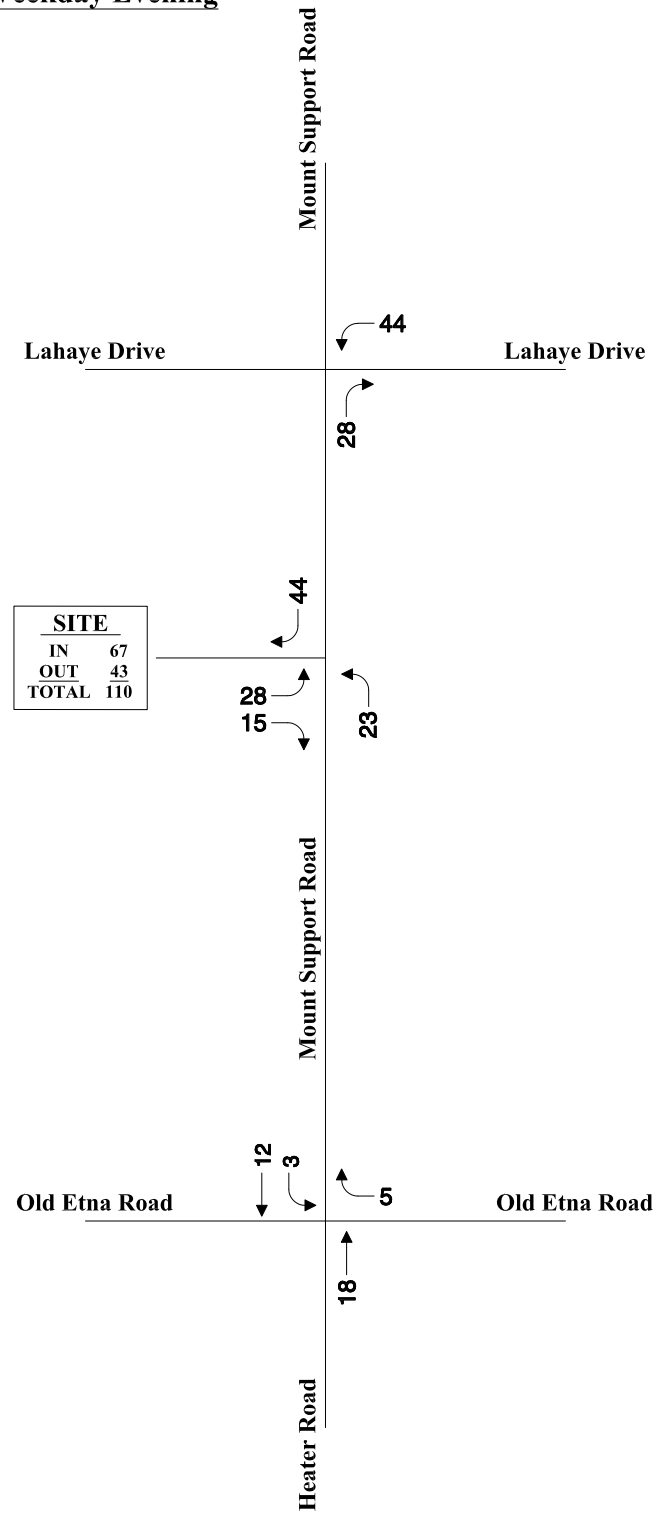
Figure 9



### Weekday Morning



### Weekday Evening



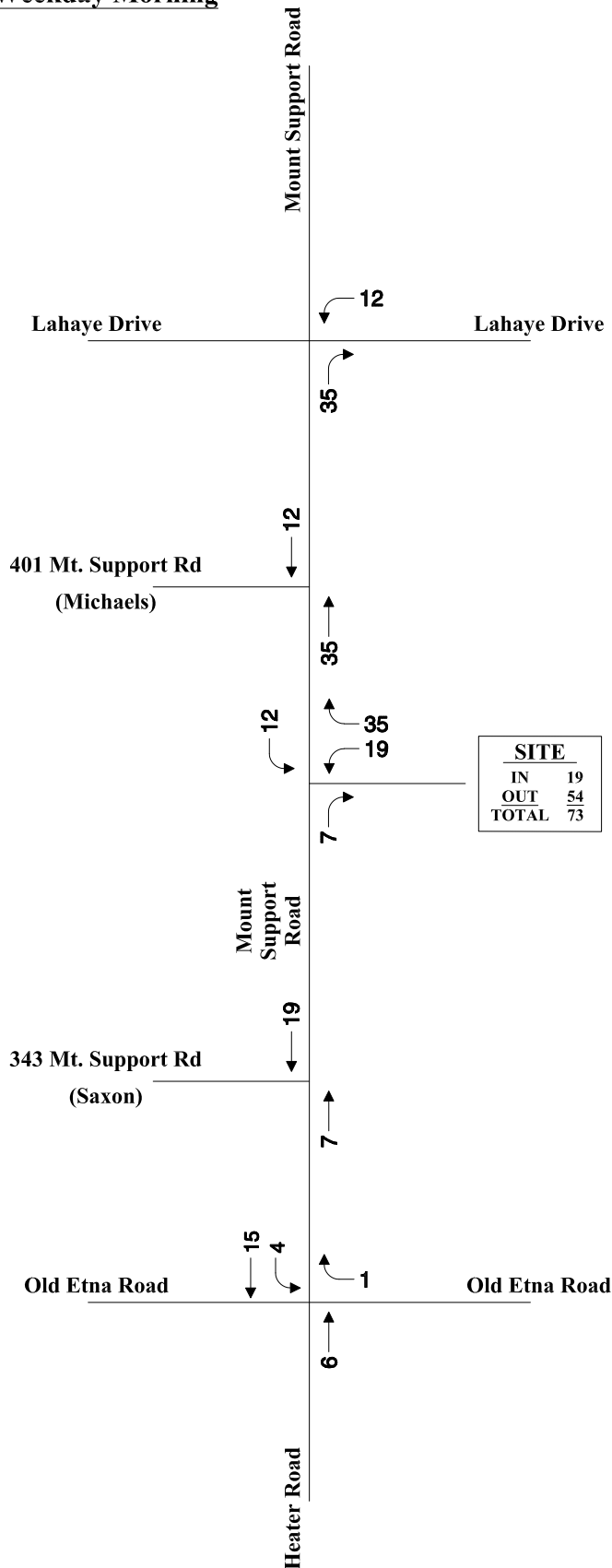
Not to Scale



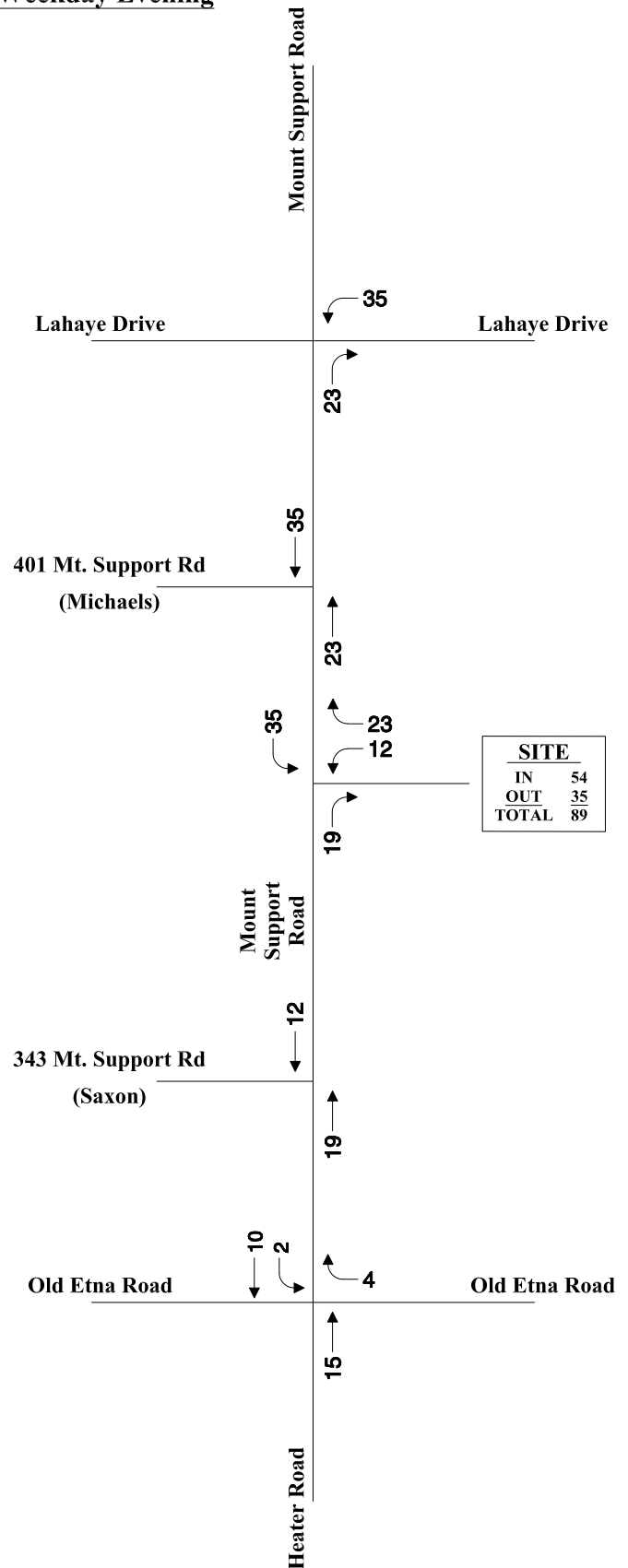
Site Generated  
Peak Hour Traffic Volumes

Figure A-1

## Weekday Morning



## Weekday Evening



Not to Scale



Site Generated  
Peak Hour Traffic Volumes

**Figure A-1**

## Trip-Generation and Distribution Calculations

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**ITE TRIP GENERATION WORKSHEET**  
**(11th Edition, Updated 2021)**

**LANDUSE:** Multifamily Housing (Mid-Rise) - Not Close to Rail Transit: 4-10 stories  
**LANDUSE CODE:** 221 Independent Variable --- Number of Dwelling Units  
**SETTING/LOCATION:** General Urban/Suburban  
**JOB NAME:** 474 dwelling units  
**JOB NUMBER:**

**WEEKDAY**

| RATES: |                       | # Studies | R^2  | Total Trip Ends |      |      | Independent Variable Range |     |       | Directional Distribution |      |
|--------|-----------------------|-----------|------|-----------------|------|------|----------------------------|-----|-------|--------------------------|------|
|        |                       |           |      | Average         | Low  | High | Average                    | Low | High  | Enter                    | Exit |
|        | DAILY                 | 11        | 0.93 | 4.54            | 3.76 | 5.40 | 201                        | 60  | 330   | 50%                      | 50%  |
|        | AM PEAK OF GENERATOR  | 23        | 0.89 | 0.35            | 0.13 | 0.53 | 226                        | 21  | 1,168 | 26%                      | 74%  |
|        | PM PEAK OF GENERATOR  | 22        | 0.93 | 0.39            | 0.19 | 0.60 | 221                        | 21  | 1,168 | 60%                      | 40%  |
|        | AM PEAK (ADJACENT ST) | 30        | 0.91 | 0.37            | 0.15 | 0.53 | 173                        | 26  | 490   | 23%                      | 77%  |
|        | PM PEAK (ADJACENT ST) | 31        | 0.91 | 0.39            | 0.19 | 0.57 | 169                        | 26  | 490   | 61%                      | 39%  |

| TRIPS: |                       | BY AVERAGE |       |       | BY REGRESSION |       |       |
|--------|-----------------------|------------|-------|-------|---------------|-------|-------|
|        |                       | Total      | Enter | Exit  | Total         | Enter | Exit  |
|        | DAILY                 | 2,152      | 1,076 | 1,076 | 2,216         | 1,108 | 1,108 |
|        | AM PEAK OF GENERATOR  | 166        | 43    | 123   | 158           | 41    | 117   |
|        | PM PEAK OF GENERATOR  | 185        | 111   | 74    | 167           | 100   | 67    |
|        | AM PEAK (ADJACENT ST) | 175        | 40    | 135   | 197           | 45    | 152   |
|        | PM PEAK (ADJACENT ST) | 185        | 113   | 72    | 185           | 113   | 72    |

**SATURDAY**

| RATES: |                   | # Studies | R^2  | Total Trip Ends |      |      | Independent Variable Range |     |      | Directional Distribution |      |
|--------|-------------------|-----------|------|-----------------|------|------|----------------------------|-----|------|--------------------------|------|
|        |                   |           |      | Average         | Low  | High | Average                    | Low | High | Enter                    | Exit |
|        | DAILY             | 5         | 0.91 | 4.57            | 4.03 | 5.31 | 250                        | 140 | 330  | 50%                      | 50%  |
|        | PEAK OF GENERATOR | 5         | 0.92 | 0.39            | 0.34 | 0.43 | 250                        | 140 | 330  | 51%                      | 49%  |

| TRIPS: |                   | BY AVERAGE |       |       | BY REGRESSION |       |       |
|--------|-------------------|------------|-------|-------|---------------|-------|-------|
|        |                   | Total      | Enter | Exit  | Total         | Enter | Exit  |
|        | DAILY             | 2,168      | 1,084 | 1,084 | 2,064         | 1,032 | 1,032 |
|        | PEAK OF GENERATOR | 185        | 94    | 91    | 191           | 97    | 93    |

**SUNDAY**

| RATES: |                   | # Studies | R^2  | Total Trip Ends |      |      | Independent Variable Range |     |      | Directional Distribution |      |
|--------|-------------------|-----------|------|-----------------|------|------|----------------------------|-----|------|--------------------------|------|
|        |                   |           |      | Average         | Low  | High | Average                    | Low | High | Enter                    | Exit |
|        | DAILY             | 5         | 0.85 | 3.77            | 3.06 | 4.24 | 250                        | 140 | 330  | 50%                      | 50%  |
|        | PEAK OF GENERATOR | 5         | 0.79 | 0.32            | 0.26 | 0.42 | 250                        | 140 | 330  | 55%                      | 45%  |

| TRIPS: |                   | BY AVERAGE |       |      | BY REGRESSION |       |      |
|--------|-------------------|------------|-------|------|---------------|-------|------|
|        |                   | Total      | Enter | Exit | Total         | Enter | Exit |
|        | DAILY             | 1,788      | 894   | 894  | 1,672         | 836   | 836  |
|        | PEAK OF GENERATOR | 152        | 83    | 68   | 135           | 74    | 61   |

**Table 3. Residence MCD/County to Workplace MCD/County Commuting Flows for the United States and Puerto Rico**  
**Sorted by Residence Geography: 5-Year ACS, 2011-2015**

Universe: Workers 16 years and over.

Commuting flows are sorted by residence state, residence county, and residence minor civil division.

Place of Residency: Lebanon, NH - Grafton County

| Place of Work |                           | Commuting Flow            | Travel Route Factors |            |              |              | Travel Route by # of Commuters |            |              |              | Travel Route by % of Commuters |            |              |              |
|---------------|---------------------------|---------------------------|----------------------|------------|--------------|--------------|--------------------------------|------------|--------------|--------------|--------------------------------|------------|--------------|--------------|
| State Name    | Minor Civil Division Name | Workers in Commuting Flow | I-89 North           | I-89 South | NH 120 North | NH 120 South | I-89 North                     | I-89 South | NH 120 North | NH 120 South | I-89 North                     | I-89 South | NH 120 North | NH 120 South |
| MA            | Cambridge city            | 14                        |                      | 1          |              |              | 0                              | 14         | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| MA            | Boston city               | 21                        |                      | 1          |              |              | 0                              | 21         | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Walpole town              | 17                        | 1                    |            |              |              | 17                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Bath town                 | 16                        |                      |            | 1            |              | 0                              | 0          | 16           | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Bethlehem town            | 14                        |                      |            | 1            |              | 0                              | 0          | 14           | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Canaan town               | 75                        |                      | 1          |              |              | 0                              | 75         | 0            | 0            | 0%                             | 1%         | 0%           | 0%           |
| NH            | Enfield town              | 80                        |                      | 1          |              |              | 0                              | 80         | 0            | 0            | 0%                             | 1%         | 0%           | 0%           |
| NH            | Franconia town            | 18                        |                      |            | 1            |              | 0                              | 0          | 18           | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Hanover town              | 1,220                     |                      |            | 1            |              | 0                              | 0          | 1,220        | 0            | 0%                             | 0%         | 17%          | 0%           |
| NH            | Lebanon city              | 4,212                     | 0.1                  | 0.25       | 0.6          | 0.05         | 421                            | 1,053      | 2,527        | 211          | 6%                             | 15%        | 35%          | 3%           |
| NH            | Littleton town            | 87                        |                      |            | 1            |              | 0                              | 0          | 87           | 0            | 0%                             | 0%         | 1%           | 0%           |
| NH            | Lyme town                 | 69                        |                      |            | 1            |              | 0                              | 0          | 69           | 0            | 0%                             | 0%         | 1%           | 0%           |
| NH            | Piermont town             | 26                        |                      |            | 1            |              | 0                              | 0          | 26           | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Plymouth town             | 89                        |                      | 1          |              |              | 0                              | 89         | 0            | 0            | 0%                             | 1%         | 0%           | 0%           |
| NH            | Nashua city               | 14                        |                      | 1          |              |              | 0                              | 14         | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Concord city              | 31                        |                      | 1          |              |              | 0                              | 31         | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | New London town           | 53                        |                      | 1          |              |              | 0                              | 53         | 0            | 0            | 0%                             | 1%         | 0%           | 0%           |
| NH            | Claremont city            | 78                        | 1                    |            |              |              | 78                             | 0          | 0            | 0            | 1%                             | 0%         | 0%           | 0%           |
| NH            | Cornish town              | 18                        |                      |            | 1            |              | 0                              | 0          | 18           | 0            | 0%                             | 0%         | 0%           | 0%           |
| NH            | Newport town              | 56                        |                      | 1          |              |              | 0                              | 56         | 0            | 0            | 0%                             | 1%         | 0%           | 0%           |
| NH            | Plainfield town           | 79                        |                      |            |              | 1            | 0                              | 0          | 0            | 79           | 0%                             | 0%         | 0%           | 1%           |
| VT            | Williston town            | 13                        | 1                    |            |              |              | 13                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Fairlee town              | 14                        |                      |            | 1            |              | 0                              | 0          | 14           | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Newbury town              | 16                        |                      |            | 1            |              | 0                              | 0          | 16           | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Thetford town             | 18                        |                      |            | 1            |              | 0                              | 0          | 18           | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Killington town           | 13                        | 1                    |            |              |              | 13                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Rutland city              | 15                        | 1                    |            |              |              | 15                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Montpelier city           | 45                        | 1                    |            |              |              | 45                             | 0          | 0            | 0            | 1%                             | 0%         | 0%           | 0%           |
| VT            | Grafton town              | 13                        | 1                    |            |              |              | 13                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Bethel town               | 13                        | 1                    |            |              |              | 13                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Hartford town             | 380                       | 1                    |            |              |              | 380                            | 0          | 0            | 0            | 5%                             | 0%         | 0%           | 0%           |
| VT            | Ludlow town               | 28                        | 1                    |            |              |              | 28                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Norwich town              | 62                        |                      |            | 1            |              | 0                              | 0          | 62           | 0            | 0%                             | 0%         | 1%           | 0%           |
| VT            | Plymouth town             | 31                        | 1                    |            |              |              | 31                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Royalton town             | 57                        | 1                    |            |              |              | 57                             | 0          | 0            | 0            | 1%                             | 0%         | 0%           | 0%           |
| VT            | Sharon town               | 14                        | 1                    |            |              |              | 14                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Springfield town          | 20                        | 1                    |            |              |              | 20                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
| VT            | Windsor town              | 70                        | 1                    |            |              |              | 70                             | 0          | 0            | 0            | 1%                             | 0%         | 0%           | 0%           |
| VT            | Woodstock town            | 18                        | 1                    |            |              |              | 18                             | 0          | 0            | 0            | 0%                             | 0%         | 0%           | 0%           |
|               |                           | 7,127                     |                      |            |              |              | 1,246                          | 1,486      | 4,105        | 290          | 17%                            | 21%        | 58%          | 4%           |
|               |                           |                           |                      |            |              |              | Rounded:                       |            |              |              | 15%                            | 20%        | 60%          | 5%           |

Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Flows are presented for MCDs for the 12 "strong MCD states" (CT, ME, MA, NH, RI, VT, MI, WI, NJ, NY, MN, and PA), and at the county level for all other states.

Source: U.S. Census Bureau, 2011-2015 American Community Survey.

## No-Build and Build Intersection Analysis Worksheets

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Intersection

| Int Delay, s/veh         | 35.1                                                                              |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Future Vol, veh/h        | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 53   | 0                                                                                 | 10   | 10   | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 59                                                                                | 59   | 25                                                                                | 25   | 67   | 67                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 4    | 4                                                                                 |
| Mvmt Flow                | 8                                                                                 | 898  | 0                                                                                 | 4    | 313  | 4                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 642    | 65     | 0      |
| Stage 1              | 12     | -      | -      |
| Stage 2              | 630    | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 442    | 1005   | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 535    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 351    | 945    | -      |
| Mov Cap-2 Maneuver   | 351    | -      | -      |
| Stage 1              | 1006   | -      | -      |
| Stage 2              | 429    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 44.8 | 0  | 7.7 |
| HCM LOS              | E    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 930   | 1576  |
| HCM Lane V/C Ratio    | -   | -        | 0.975 | 0.199 |
| HCM Control Delay (s) | -   | -        | 44.8  | 7.8   |
| HCM Lane LOS          | -   | -        | E     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 17    | 0.7   |

Intersection

| Int Delay, s/veh         | 4.7                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Future Vol, veh/h        | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 57                                                                                | 57   | 84                                                                                | 84   | 83   | 83                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 228                                                                               | 0    | 89                                                                                | 220  | 1    | 36                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 240    | 213    | 0      |
| Stage 1              | 202    | -      | -      |
| Stage 2              | 38     | -      | -      |
| Critical Hdwy        | 6.41   | 6.21   | -      |
| Critical Hdwy Stg 1  | 5.41   | -      | -      |
| Critical Hdwy Stg 2  | 5.41   | -      | -      |
| Follow-up Hdwy       | 3.509  | 3.309  | -      |
| Pot Cap-1 Maneuver   | 750    | 830    | -      |
| Stage 1              | 834    | -      | -      |
| Stage 2              | 987    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 747    | 819    | -      |
| Mov Cap-2 Maneuver   | 747    | -      | -      |
| Stage 1              | 831    | -      | -      |
| Stage 2              | 986    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 11.9 | 0  | 0.3 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 747   | 1244  |
| HCM Lane V/C Ratio    | -   | -        | 0.305 | 0.001 |
| HCM Control Delay (s) | -   | -        | 11.9  | 7.9   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 1.3   | 0     |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2025 No-Build  
Weekday AM

#### Intersection

Int Delay, s/veh 1.6

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 65                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 25   |
| Future Vol, veh/h        | 65                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 25   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 86   | 86                                                                                | 77                                                                                | 77   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 71                                                                                | 5    | 1    | 273                                                                               | 260                                                                               | 32   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 559 | 285 | 300   | 0 | - | 0 |
| Stage 1              | 284 | -   | -     | - | - | - |
| Stage 2              | 275 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 494 | 759 | 1244  | - | - | - |
| Stage 1              | 769 | -   | -     | - | - | - |
| Stage 2              | 776 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 486 | 752 | 1235  | - | - | - |
| Mov Cap-2 Maneuver   | 486 | -   | -     | - | - | - |
| Stage 1              | 762 | -   | -     | - | - | - |
| Stage 2              | 770 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 13.5 | 0 | 0 |
| HCM LOS              | B    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1235  | - | 499   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.152 | - | - |
| HCM Control Delay (s) | 7.9   | 0 | 13.5  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.5   | - | - |

4: Heater Rd & Old Etna Rd  
HCM 6th AWSC

2025 No-Build  
Weekday AM

Intersection

Intersection Delay, s/veh 17.4  
Intersection LOS C

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Future Vol, veh/h          | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Peak Hour Factor           | 0.69 | 0.69                                                                              | 0.69 | 0.90 | 0.90                                                                              | 0.90 | 0.83 | 0.83                                                                                | 0.83 | 0.66 | 0.66                                                                                | 0.66 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 4    | 109                                                                               | 145  | 94   | 67                                                                                | 56   | 114  | 217                                                                                 | 60   | 45   | 258                                                                                 | 2    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 14.8 |                                                                                   |      | 14.3 |                                                                                   |      | 21.2 |                                                                                     |      | 17.1 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | C    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 29%   | 2%    | 44%   | 15%   |
| Vol Thru, %            | 55%   | 42%   | 31%   | 85%   |
| Vol Right, %           | 15%   | 56%   | 26%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 325   | 178   | 195   | 201   |
| LT Vol                 | 95    | 3     | 85    | 30    |
| Through Vol            | 180   | 75    | 60    | 170   |
| RT Vol                 | 50    | 100   | 50    | 1     |
| Lane Flow Rate         | 392   | 258   | 217   | 305   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.673 | 0.458 | 0.404 | 0.546 |
| Departure Headway (Hd) | 6.189 | 6.385 | 6.712 | 6.457 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 583   | 562   | 533   | 557   |
| Service Time           | 4.254 | 4.456 | 4.788 | 4.527 |
| HCM Lane V/C Ratio     | 0.672 | 0.459 | 0.407 | 0.548 |
| HCM Control Delay      | 21.2  | 14.8  | 14.3  | 17.1  |
| HCM Lane LOS           | C     | B     | B     | C     |
| HCM 95th-tile Q        | 5.1   | 2.4   | 1.9   | 3.3   |



5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2025 No-Build  
Weekday AM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 103                                                                               | 148                                                                               | 110                                                                               | 113                                                                               | 67                                                                                | 52                                                                                | 2645                                                                               | 349                                                                                 | 58                                                                                  | 872                                                                                 |
| v/c Ratio               | 0.90                                                                              | 0.99                                                                              | 0.87                                                                              | 0.90                                                                              | 0.21                                                                              | 0.54                                                                              | 1.19                                                                               | 0.29                                                                                | 0.59                                                                                | 0.39                                                                                |
| Control Delay           | 123.5                                                                             | 115.4                                                                             | 112.8                                                                             | 120.8                                                                             | 11.4                                                                              | 84.0                                                                              | 115.5                                                                              | 1.2                                                                                 | 87.2                                                                                | 12.6                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 123.5                                                                             | 115.4                                                                             | 112.8                                                                             | 120.8                                                                             | 11.4                                                                              | 84.0                                                                              | 115.5                                                                              | 1.2                                                                                 | 87.2                                                                                | 12.6                                                                                |
| Queue Length 50th (ft)  | 95                                                                                | 98                                                                                | 106                                                                               | 112                                                                               | 0                                                                                 | 47                                                                                | ~1536                                                                              | 5                                                                                   | 52                                                                                  | 193                                                                                 |
| Queue Length 95th (ft)  | #169                                                                              | #186                                                                              | #224                                                                              | #247                                                                              | 43                                                                                | 88                                                                                | #1535                                                                              | 15                                                                                  | 97                                                                                  | 224                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 115                                                                               | 150                                                                               | 128                                                                               | 125                                                                               | 315                                                                               | 113                                                                               | 2228                                                                               | 1208                                                                                | 113                                                                                 | 2257                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.90                                                                              | 0.99                                                                              | 0.86                                                                              | 0.90                                                                              | 0.21                                                                              | 0.46                                                                              | 1.19                                                                               | 0.29                                                                                | 0.51                                                                                | 0.39                                                                                |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 No-Build  
Weekday AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 80                                                                                | 45                                                                                | 70                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2275                                                                                | 300                                                                                 | 50                                                                                  | 680                                                                                 | 70                                                                                  |
| Future Volume (vph)               | 80                                                                                | 45                                                                                | 70                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2275                                                                                | 300                                                                                 | 50                                                                                  | 680                                                                                 | 70                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.91                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1718                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3483                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1718                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3483                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.78                                                                              | 0.78                                                                              | 0.78                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Adj. Flow (vph)                   | 103                                                                               | 58                                                                                | 90                                                                                | 184                                                                               | 32                                                                                | 74                                                                                | 52                                                                                  | 2645                                                                                | 349                                                                                 | 58                                                                                  | 791                                                                                 | 81                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 55                                                                                | 0                                                                                   | 0                                                                                   | 88                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 103                                                                               | 108                                                                               | 0                                                                                 | 110                                                                               | 111                                                                               | 12                                                                                | 52                                                                                  | 2645                                                                                | 261                                                                                 | 58                                                                                  | 867                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 9.0                                                                               | 9.0                                                                               |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.9                                                                              | 6.7                                                                                 | 88.1                                                                                | 99.1                                                                                | 7.9                                                                                 | 89.3                                                                                |                                                                                     |
| Effective Green, g (s)            | 9.0                                                                               | 9.0                                                                               |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.9                                                                              | 6.7                                                                                 | 88.1                                                                                | 99.1                                                                                | 7.9                                                                                 | 89.3                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.08                                                                              | 0.08                                                                              | 0.18                                                                              | 0.05                                                                                | 0.63                                                                                | 0.71                                                                                | 0.06                                                                                | 0.64                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 115                                                                               | 110                                                                               |                                                                                   | 128                                                                               | 123                                                                               | 259                                                                               | 84                                                                                  | 2227                                                                                | 1120                                                                                | 99                                                                                  | 2221                                                                                |                                                                                     |
| v/s Ratio Prot                    | 0.06                                                                              | c0.06                                                                             |                                                                                   | 0.07                                                                              | c0.07                                                                             | 0.01                                                                              | 0.03                                                                                | c0.75                                                                               | 0.16                                                                                | c0.03                                                                               | 0.25                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.90                                                                              | 0.98                                                                              |                                                                                   | 0.86                                                                              | 0.90                                                                              | 0.05                                                                              | 0.62                                                                                | 1.19                                                                                | 0.23                                                                                | 0.59                                                                                | 0.39                                                                                |                                                                                     |
| Uniform Delay, d1                 | 65.0                                                                              | 65.4                                                                              |                                                                                   | 63.7                                                                              | 64.0                                                                              | 47.7                                                                              | 65.4                                                                                | 26.0                                                                                | 7.2                                                                                 | 64.5                                                                                | 12.2                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 51.4                                                                              | 78.2                                                                              |                                                                                   | 38.9                                                                              | 51.5                                                                              | 0.0                                                                               | 9.2                                                                                 | 89.3                                                                                | 0.0                                                                                 | 5.6                                                                                 | 0.5                                                                                 |                                                                                     |
| Delay (s)                         | 116.5                                                                             | 143.6                                                                             |                                                                                   | 102.6                                                                             | 115.5                                                                             | 47.7                                                                              | 74.6                                                                                | 115.3                                                                               | 7.2                                                                                 | 70.0                                                                                | 12.7                                                                                |                                                                                     |
| Level of Service                  | F                                                                                 | F                                                                                 |                                                                                   | F                                                                                 | F                                                                                 | D                                                                                 | E                                                                                   | F                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 132.4                                                                             |                                                                                   |                                                                                   | 94.9                                                                              |                                                                                   |                                                                                     | 102.2                                                                               |                                                                                     |                                                                                     | 16.3                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 85.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.10                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 88.7%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2025 No-Build  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 93                                                                                | 15                                                                                | 17                                                                                | 15                                                                                | 93                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 66.4%                                                                             | 10.7%                                                                             | 12.1%                                                                             | 10.7%                                                                             | 66.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 20                                                                                | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                |
| End Time (s)           | 35                                                                                | 128                                                                               | 3                                                                                 | 20                                                                                | 35                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 29                                                                                | 122                                                                               | 137                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Local Start Time (s)   | 38                                                                                | 53                                                                                | 6                                                                                 | 21                                                                                | 38                                                                                | 53                                                                                |
| Local Yield (s)        | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 47                                                                                | 0                                                                                 | 15                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 93 s                                                                                       | 15 s                                                                                     | 17 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 93 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 12.9

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 0                                                                                 | 225                                                                               | 490                                                                               | 2935                                                                              | 1210                                                                              | 75                                                                                |
| Future Vol, veh/h        | 0                                                                                 | 225                                                                               | 490                                                                               | 2935                                                                              | 1210                                                                              | 75                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 72                                                                                | 72                                                                                | 89                                                                                | 89                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 4                                                                                 | 4                                                                                 |
| Mvmt Flow                | 0                                                                                 | 313                                                                               | 551                                                                               | 3298                                                                              | 1301                                                                              | 81                                                                                |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 4093   | 691    | 1382   |
| Stage 1              | 1342   | -      | -      |
| Stage 2              | 2751   | -      | -      |
| Critical Hdwy        | 6.82   | 6.92   | 4.14   |
| Critical Hdwy Stg 1  | 5.82   | -      | -      |
| Critical Hdwy Stg 2  | 5.82   | -      | -      |
| Follow-up Hdwy       | 3.51   | 3.31   | 2.22   |
| Pot Cap-1 Maneuver   | 2      | 389    | ~ 492  |
| Stage 1              | 210    | -      | -      |
| Stage 2              | 35     | -      | -      |
| Platoon blocked, %   |        |        | -      |
| Mov Cap-1 Maneuver   | 0      | 389    | ~ 492  |
| Mov Cap-2 Maneuver   | 0      | -      | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 35     | -      | -      |

| Approach             | EB   | NB   | SB |
|----------------------|------|------|----|
| HCM Control Delay, s | 42.8 | 15.1 | 0  |
| HCM LOS              | E    |      |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h)      | ~ 492 | -   | -     | 389   | -   | -   |
| HCM Lane V/C Ratio    | 1.119 | -   | -     | 0.803 | -   | -   |
| HCM Control Delay (s) | 105.4 | -   | 0     | 42.8  | -   | -   |
| HCM Lane LOS          | F     | -   | A     | E     | -   | -   |
| HCM 95th %tile Q(veh) | 18.5  | -   | -     | 7.1   | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Intersection

| Int Delay, s/veh         | 7.2                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 1                                                                                 | 75   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Future Vol, veh/h        | 1                                                                                 | 75   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 81                                                                                | 81   | 50                                                                                | 50   | 73   | 73                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 1                                                                                 | 93   | 10                                                                                | 10   | 130  | 7                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 282    | 18     | 0      |
| Stage 1              | 15     | -      | -      |
| Stage 2              | 267    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 708    | 1061   | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 778    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 651    | 1058   | -      |
| Mov Cap-2 Maneuver   | 651    | -      | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 715    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.8 | 0  | 7.1 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1049  | 1609  |
| HCM Lane V/C Ratio    | -   | -        | 0.089 | 0.081 |
| HCM Control Delay (s) | -   | -        | 8.8   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.3   | 0.3   |

Intersection

| Int Delay, s/veh         | 1.7                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 30                                                                                | 3    | 20                                                                                | 60   | 3    | 45                                                                                |
| Future Vol, veh/h        | 30                                                                                | 3    | 20                                                                                | 60   | 3    | 45                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 37                                                                                | 4    | 34                                                                                | 102  | 4    | 56                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 149    | 85     | 0      |
| Stage 1              | 85     | -      | -      |
| Stage 2              | 64     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 848    | 980    | -      |
| Stage 1              | 943    | -      | -      |
| Stage 2              | 964    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 845    | 980    | -      |
| Mov Cap-2 Maneuver   | 845    | -      | -      |
| Stage 1              | 943    | -      | -      |
| Stage 2              | 961    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.4 | 0  | 0.5 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 856   | 1461  |
| HCM Lane V/C Ratio    | -   | -        | 0.047 | 0.003 |
| HCM Control Delay (s) | -   | -        | 9.4   | 7.5   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

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#### Intersection

| Int Delay, s/veh         | 0.4                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 40   |
| Future Vol, veh/h        | 10                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 40   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 56                                                                                | 56   | 97   | 97                                                                                | 75                                                                                | 75   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 18                                                                                | 2    | 1    | 201                                                                               | 520                                                                               | 53   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 751    | 548    | 574   | 0      | - | 0 |
| Stage 1              | 548    | -      | -     | -      | - | - |
| Stage 2              | 203    | -      | -     | -      | - | - |
| Critical Hdwy        | 6.4    | 6.2    | 4.16  | -      | - | - |
| Critical Hdwy Stg 1  | 5.4    | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.4    | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.254 | -      | - | - |
| Pot Cap-1 Maneuver   | 381    | 540    | 979   | -      | - | - |
| Stage 1              | 583    | -      | -     | -      | - | - |
| Stage 2              | 836    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 380    | 539    | 978   | -      | - | - |
| Mov Cap-2 Maneuver   | 380    | -      | -     | -      | - | - |
| Stage 1              | 582    | -      | -     | -      | - | - |
| Stage 2              | 835    | -      | -     | -      | - | - |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 14.7 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 978   | -   | 390   | -   | -   |
| HCM Lane V/C Ratio    | 0.001 | -   | 0.05  | -   | -   |
| HCM Control Delay (s) | 8.7   | 0   | 14.7  | -   | -   |
| HCM Lane LOS          | A     | A   | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | 0.2   | -   | -   |

Intersection

Intersection Delay, s/veh 18  
Intersection LOS C

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 15                                                                                | 45   | 125  | 10                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Future Vol, veh/h          | 3    | 15                                                                                | 45   | 125  | 10                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Peak Hour Factor           | 0.45 | 0.45                                                                              | 0.45 | 0.95 | 0.95                                                                              | 0.95 | 0.77 | 0.77                                                                                | 0.77 | 0.76 | 0.76                                                                                | 0.76 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 7    | 33                                                                                | 100  | 132  | 11                                                                                | 37   | 32   | 201                                                                                 | 91   | 26   | 461                                                                                 | 7    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 11.3 |                                                                                   |      | 12.8 |                                                                                   |      | 14.8 |                                                                                     |      | 23.8 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | B    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 10%   | 5%    | 74%   | 5%    |
| Vol Thru, %            | 62%   | 24%   | 6%    | 93%   |
| Vol Right, %           | 28%   | 71%   | 21%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 250   | 63    | 170   | 375   |
| LT Vol                 | 25    | 3     | 125   | 20    |
| Through Vol            | 155   | 15    | 10    | 350   |
| RT Vol                 | 70    | 45    | 35    | 5     |
| Lane Flow Rate         | 325   | 140   | 179   | 493   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.519 | 0.243 | 0.327 | 0.755 |
| Departure Headway (Hd) | 5.755 | 6.247 | 6.588 | 5.618 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 630   | 575   | 548   | 646   |
| Service Time           | 3.755 | 4.273 | 4.614 | 3.618 |
| HCM Lane V/C Ratio     | 0.516 | 0.243 | 0.327 | 0.763 |
| HCM Control Delay      | 14.8  | 11.3  | 12.8  | 23.8  |
| HCM Lane LOS           | B     | B     | B     | C     |
| HCM 95th-tile Q        | 3     | 0.9   | 1.4   | 6.9   |

# 5: Route 120 & Old Etna Rd/Etna Rd Queues

2025 No-Build  
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|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 54                                                                                | 102                                                                               | 160                                                                               | 160                                                                               | 58                                                                                | 16                                                                                | 824                                                                                | 133                                                                                 | 62                                                                                  | 2026                                                                                |
| v/c Ratio               | 0.48                                                                              | 0.60                                                                              | 0.76                                                                              | 0.79                                                                              | 0.15                                                                              | 0.21                                                                              | 0.40                                                                               | 0.11                                                                                | 0.55                                                                                | 0.88                                                                                |
| Control Delay           | 76.7                                                                              | 38.9                                                                              | 80.7                                                                              | 84.1                                                                              | 6.6                                                                               | 70.7                                                                              | 18.4                                                                               | 0.9                                                                                 | 81.5                                                                                | 28.4                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 76.7                                                                              | 38.9                                                                              | 80.7                                                                              | 84.1                                                                              | 6.6                                                                               | 70.7                                                                              | 18.4                                                                               | 0.9                                                                                 | 81.5                                                                                | 28.4                                                                                |
| Queue Length 50th (ft)  | 48                                                                                | 29                                                                                | 149                                                                               | 156                                                                               | 0                                                                                 | 14                                                                                | 211                                                                                | 0                                                                                   | 56                                                                                  | 665                                                                                 |
| Queue Length 95th (ft)  | 84                                                                                | 76                                                                                | 215                                                                               | 225                                                                               | 24                                                                                | 40                                                                                | 310                                                                                | 10                                                                                  | 105                                                                                 | #1237                                                                               |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                               |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                    | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 179                                                                               | 231                                                                               | 264                                                                               | 254                                                                               | 407                                                                               | 114                                                                               | 2059                                                                               | 1210                                                                                | 140                                                                                 | 2296                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.30                                                                              | 0.44                                                                              | 0.61                                                                              | 0.63                                                                              | 0.14                                                                              | 0.14                                                                              | 0.40                                                                               | 0.11                                                                                | 0.44                                                                                | 0.88                                                                                |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.



5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

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|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 45                                                                                | 25                                                                                | 60                                                                                | 260                                                                               | 10                                                                                | 55                                                                                | 15                                                                                  | 775                                                                                 | 125                                                                                 | 60                                                                                  | 1925                                                                                | 40                                                                                  |
| Future Volume (vph)               | 45                                                                                | 25                                                                                | 60                                                                                | 260                                                                               | 10                                                                                | 55                                                                                | 15                                                                                  | 775                                                                                 | 125                                                                                 | 60                                                                                  | 1925                                                                                | 40                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 54                                                                                | 30                                                                                | 72                                                                                | 302                                                                               | 12                                                                                | 64                                                                                | 16                                                                                  | 824                                                                                 | 133                                                                                 | 62                                                                                  | 1985                                                                                | 41                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 65                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 44                                                                                | 0                                                                                   | 0                                                                                   | 39                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 54                                                                                | 37                                                                                | 0                                                                                 | 160                                                                               | 159                                                                               | 14                                                                                | 16                                                                                  | 824                                                                                 | 94                                                                                  | 62                                                                                  | 2025                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 8.7                                                                               | 8.7                                                                               |                                                                                   | 17.8                                                                              | 17.8                                                                              | 32.6                                                                              | 2.8                                                                                 | 80.7                                                                                | 98.5                                                                                | 8.8                                                                                 | 86.7                                                                                |                                                                                     |
| Effective Green, g (s)            | 8.7                                                                               | 8.7                                                                               |                                                                                   | 17.8                                                                              | 17.8                                                                              | 32.6                                                                              | 2.8                                                                                 | 80.7                                                                                | 98.5                                                                                | 8.8                                                                                 | 86.7                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.13                                                                              | 0.13                                                                              | 0.23                                                                              | 0.02                                                                                | 0.58                                                                                | 0.70                                                                                | 0.06                                                                                | 0.62                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 111                                                                               | 105                                                                               |                                                                                   | 211                                                                               | 203                                                                               | 346                                                                               | 35                                                                                  | 2060                                                                                | 1125                                                                                | 112                                                                                 | 2205                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.03                                                                             | 0.02                                                                              |                                                                                   | 0.10                                                                              | c0.10                                                                             | 0.01                                                                              | 0.01                                                                                | 0.23                                                                                | 0.06                                                                                | c0.03                                                                               | c0.57                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.49                                                                              | 0.36                                                                              |                                                                                   | 0.76                                                                              | 0.78                                                                              | 0.04                                                                              | 0.46                                                                                | 0.40                                                                                | 0.08                                                                                | 0.55                                                                                | 0.92                                                                                |                                                                                     |
| Uniform Delay, d1                 | 63.5                                                                              | 63.0                                                                              |                                                                                   | 59.0                                                                              | 59.2                                                                              | 41.6                                                                              | 67.8                                                                                | 16.3                                                                                | 6.5                                                                                 | 63.7                                                                                | 23.5                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 1.2                                                                               | 0.8                                                                               |                                                                                   | 12.9                                                                              | 16.5                                                                              | 0.0                                                                               | 3.4                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 3.3                                                                                 | 7.6                                                                                 |                                                                                     |
| Delay (s)                         | 64.7                                                                              | 63.7                                                                              |                                                                                   | 71.9                                                                              | 75.7                                                                              | 41.6                                                                              | 71.3                                                                                | 16.9                                                                                | 6.5                                                                                 | 67.0                                                                                | 31.1                                                                                |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | C                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 64.1                                                                              |                                                                                   |                                                                                   | 68.9                                                                              |                                                                                   |                                                                                     | 16.4                                                                                |                                                                                     |                                                                                     | 32.2                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 33.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.87                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 79.2%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2025 No-Build  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 77                                                                                | 20                                                                                | 28                                                                                | 17                                                                                | 75                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 55.0%                                                                             | 14.3%                                                                             | 20.0%                                                                             | 12.1%                                                                             | 53.6%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 36                                                                                | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                |
| End Time (s)           | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Local Start Time (s)   | 54                                                                                | 69                                                                                | 6                                                                                 | 26                                                                                | 54                                                                                | 71                                                                                |
| Local Yield (s)        | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 130  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 77 s                                                                                       | 20 s                                                                                     | 28 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 75 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 2.6

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 5                                                                                 | 150                                                                               | 90                                                                                | 1150                                                                              | 2840                                                                              | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 150                                                                               | 90                                                                                | 1150                                                                              | 2840                                                                              | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 86                                                                                | 86                                                                                | 98                                                                                | 98                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1                                                                                 |
| Mvmt Flow                | 6                                                                                 | 174                                                                               | 92                                                                                | 1173                                                                              | 3054                                                                              | 16                                                                                |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 3834   | 1536   | 3071   |
| Stage 1              | 3063   | -      | -      |
| Stage 2              | 771    | -      | -      |
| Critical Hdwy        | 6.8    | 6.9    | 4.14   |
| Critical Hdwy Stg 1  | 5.8    | -      | -      |
| Critical Hdwy Stg 2  | 5.8    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.22   |
| Pot Cap-1 Maneuver   | ~ 3    | ~ 107  | 106    |
| Stage 1              | 23     | -      | -      |
| Stage 2              | 422    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 0      | ~ 107  | 106    |
| Mov Cap-2 Maneuver   | 0      | -      | -      |
| Stage 1              | ~ 3    | -      | -      |
| Stage 2              | 422    | -      | -      |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s |    | 9.3 | 0  |
| HCM LOS              | -  |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2  | SBT | SBR |
|-----------------------|-------|-----|-------|--------|-----|-----|
| Capacity (veh/h)      | 106   | -   | -     | 107    | -   | -   |
| HCM Lane V/C Ratio    | 0.866 | -   | -     | 1.63   | -   | -   |
| HCM Control Delay (s) | 127.8 | -   | -     | \$ 392 | -   | -   |
| HCM Lane LOS          | F     | -   | -     | F      | -   | -   |
| HCM 95th %tile Q(veh) | 5     | -   | -     | 13.3   | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Intersection

| Int Delay, s/veh         | 7.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 30   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 30   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 9    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 67                                                                                | 67   | 25                                                                                | 25   | 64   | 64                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 45   | 0                                                                                 | 4    | 31   | 2                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 66     | 11     | 0      |
| Stage 1              | 2      | -      | -      |
| Stage 2              | 64     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 944    | 1076   | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 964    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 926    | 1067   | -      |
| Mov Cap-2 Maneuver   | 926    | -      | -      |
| Stage 1              | 1026   | -      | -      |
| Stage 2              | 946    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.5 | 0  | 6.9 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1067  | 1631  |
| HCM Lane V/C Ratio    | -   | -        | 0.042 | 0.019 |
| HCM Control Delay (s) | -   | -        | 8.5   | 7.2   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0.1   |

Intersection

| Int Delay, s/veh         | 0.9                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 0    | 15                                                                                | 15   | 0    | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 0    | 15                                                                                | 15   | 0    | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 63                                                                                | 63   | 72                                                                                | 72   | 58   | 58                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 8                                                                                 | 0    | 21                                                                                | 21   | 0    | 26                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 58     | 34     | 0      |
| Stage 1              | 32     | -      | -      |
| Stage 2              | 26     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 954    | 1045   | -      |
| Stage 1              | 996    | -      | -      |
| Stage 2              | 1002   | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 954    | 1043   | -      |
| Mov Cap-2 Maneuver   | 954    | -      | -      |
| Stage 1              | 996    | -      | -      |
| Stage 2              | 1002   | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.8 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 954   | 1580 |
| HCM Lane V/C Ratio    | -   | -        | 0.008 | -    |
| HCM Control Delay (s) | -   | -        | 8.8   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |



### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

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#### Intersection

Int Delay, s/veh 0.6

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Future Vol, veh/h        | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 75                                                                                | 75   | 64   | 64                                                                                | 89                                                                                | 89   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 13                                                                                | 0    | 0    | 94                                                                                | 90                                                                                | 17   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |      |   |   |   |
|----------------------|-----|-----|------|---|---|---|
| Conflicting Flow All | 196 | 102 | 107  | 0 | - | 0 |
| Stage 1              | 99  | -   | -    | - | - | - |
| Stage 2              | 97  | -   | -    | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.1  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.2  | - | - | - |
| Pot Cap-1 Maneuver   | 797 | 959 | 1497 | - | - | - |
| Stage 1              | 930 | -   | -    | - | - | - |
| Stage 2              | 932 | -   | -    | - | - | - |
| Platoon blocked, %   |     |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 797 | 956 | 1497 | - | - | - |
| Mov Cap-2 Maneuver   | 797 | -   | -    | - | - | - |
| Stage 1              | 930 | -   | -    | - | - | - |
| Stage 2              | 932 | -   | -    | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |     |   |   |
|----------------------|-----|---|---|
| HCM Control Delay, s | 9.6 | 0 | 0 |
| HCM LOS              | A   |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |      |   |       |   |   |
|-----------------------|------|---|-------|---|---|
| Capacity (veh/h)      | 1497 | - | 797   | - | - |
| HCM Lane V/C Ratio    | -    | - | 0.017 | - | - |
| HCM Control Delay (s) | 0    | - | 9.6   | - | - |
| HCM Lane LOS          | A    | - | A     | - | - |
| HCM 95th %tile Q(veh) | 0    | - | 0.1   | - | - |

Intersection

Intersection Delay, s/veh 7.7  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 10                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 10                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Peak Hour Factor    | 0.60 | 0.60                                                                              | 0.60 | 0.82 | 0.82                                                                              | 0.82 | 0.74 | 0.74                                                                                | 0.74 | 0.88 | 0.88                                                                                | 0.88 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 17                                                                                | 8    | 73   | 2                                                                                 | 12   | 3    | 68                                                                                  | 41   | 2    | 80                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB  | WB | NB  | SB  |
|----------------------------|-----|----|-----|-----|
| Opposing Approach          | WB  | EB | SB  | NB  |
| Opposing Lanes             | 1   | 1  | 1   | 1   |
| Conflicting Approach Left  | SB  | NB | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1  | 1   | 1   |
| Conflicting Approach Right | NB  | SB | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1  | 1   | 1   |
| HCM Control Delay          | 7.3 | 8  | 7.6 | 7.7 |
| HCM LOS                    | A   | A  | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 2%    | 0%    | 83%   | 3%    |
| Vol Thru, %            | 61%   | 67%   | 3%    | 97%   |
| Vol Right, %           | 37%   | 33%   | 14%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 82    | 15    | 72    | 72    |
| LT Vol                 | 2     | 0     | 60    | 2     |
| Through Vol            | 50    | 10    | 2     | 70    |
| RT Vol                 | 30    | 5     | 10    | 0     |
| Lane Flow Rate         | 111   | 25    | 88    | 82    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.121 | 0.029 | 0.106 | 0.095 |
| Departure Headway (Hd) | 3.944 | 4.214 | 4.334 | 4.186 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 894   | 855   | 815   | 843   |
| Service Time           | 2.032 | 2.214 | 2.426 | 2.276 |
| HCM Lane V/C Ratio     | 0.124 | 0.029 | 0.108 | 0.097 |
| HCM Control Delay      | 7.6   | 7.3   | 8     | 7.7   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.1   | 0.4   | 0.3   |

5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2025 No-Build  
Sat MIDDAY

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 20                                                                                | 27                                                                                | 58                                                                                | 59                                                                                | 25                                                                                | 11                                                                                | 583                                                                                 | 94                                                                                  | 31                                                                                  | 526                                                                                 |
| v/c Ratio               | 0.25                                                                              | 0.29                                                                              | 0.53                                                                              | 0.55                                                                              | 0.09                                                                              | 0.15                                                                              | 0.23                                                                                | 0.07                                                                                | 0.35                                                                                | 0.20                                                                                |
| Control Delay           | 71.8                                                                              | 38.7                                                                              | 78.9                                                                              | 78.6                                                                              | 0.6                                                                               | 69.0                                                                              | 9.6                                                                                 | 0.7                                                                                 | 74.2                                                                                | 7.4                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 71.8                                                                              | 38.7                                                                              | 78.9                                                                              | 78.6                                                                              | 0.6                                                                               | 69.0                                                                              | 9.6                                                                                 | 0.7                                                                                 | 74.2                                                                                | 7.4                                                                                 |
| Queue Length 50th (ft)  | 18                                                                                | 6                                                                                 | 54                                                                                | 56                                                                                | 0                                                                                 | 10                                                                                | 102                                                                                 | 0                                                                                   | 28                                                                                  | 62                                                                                  |
| Queue Length 95th (ft)  | 38                                                                                | 29                                                                                | 101                                                                               | 104                                                                               | 0                                                                                 | 32                                                                                | 160                                                                                 | 7                                                                                   | 62                                                                                  | 135                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 215                                                                               | 219                                                                               | 265                                                                               | 256                                                                               | 390                                                                               | 167                                                                               | 2514                                                                                | 1390                                                                                | 216                                                                                 | 2629                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.09                                                                              | 0.12                                                                              | 0.22                                                                              | 0.23                                                                              | 0.06                                                                              | 0.07                                                                              | 0.23                                                                                | 0.07                                                                                | 0.14                                                                                | 0.20                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 No-Build

Sat MIDDAY

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 15                                                                                | 5                                                                                 | 15                                                                                | 95                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 525                                                                                 | 85                                                                                  | 30                                                                                  | 495                                                                                 | 10                                                                                  |
| Future Volume (vph)               | 15                                                                                | 5                                                                                 | 15                                                                                | 95                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 525                                                                                 | 85                                                                                  | 30                                                                                  | 495                                                                                 | 10                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3563                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3563                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.75                                                                              | 0.75                                                                              | 0.75                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 20                                                                                | 7                                                                                 | 20                                                                                | 108                                                                               | 6                                                                                 | 28                                                                                | 11                                                                                  | 583                                                                                 | 94                                                                                  | 31                                                                                  | 516                                                                                 | 10                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 19                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 21                                                                                | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 20                                                                                | 8                                                                                 | 0                                                                                 | 58                                                                                | 57                                                                                | 4                                                                                 | 11                                                                                  | 583                                                                                 | 70                                                                                  | 31                                                                                  | 525                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 3%                                                                                | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 5.3                                                                               | 5.3                                                                               |                                                                                   | 9.6                                                                               | 9.6                                                                               | 21.6                                                                              | 2.6                                                                                 | 95.1                                                                                | 104.7                                                                               | 6.0                                                                                 | 98.5                                                                                |                                                                                     |
| Effective Green, g (s)            | 5.3                                                                               | 5.3                                                                               |                                                                                   | 9.6                                                                               | 9.6                                                                               | 21.6                                                                              | 2.6                                                                                 | 95.1                                                                                | 104.7                                                                               | 6.0                                                                                 | 98.5                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.04                                                                              | 0.04                                                                              |                                                                                   | 0.07                                                                              | 0.07                                                                              | 0.15                                                                              | 0.02                                                                                | 0.68                                                                                | 0.75                                                                                | 0.04                                                                                | 0.70                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 67                                                                                | 62                                                                                |                                                                                   | 110                                                                               | 106                                                                               | 222                                                                               | 33                                                                                  | 2452                                                                                | 1207                                                                                | 76                                                                                  | 2506                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                              |                                                                                   | 0.04                                                                              | c0.04                                                                             | 0.00                                                                              | 0.01                                                                                | c0.16                                                                               | 0.04                                                                                | c0.02                                                                               | c0.15                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.30                                                                              | 0.13                                                                              |                                                                                   | 0.53                                                                              | 0.54                                                                              | 0.02                                                                              | 0.33                                                                                | 0.24                                                                                | 0.06                                                                                | 0.41                                                                                | 0.21                                                                                |                                                                                     |
| Uniform Delay, d1                 | 65.5                                                                              | 65.1                                                                              |                                                                                   | 63.0                                                                              | 63.1                                                                              | 50.2                                                                              | 67.8                                                                                | 8.6                                                                                 | 4.7                                                                                 | 65.3                                                                                | 7.2                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 0.9                                                                               | 0.3                                                                               |                                                                                   | 2.1                                                                               | 2.6                                                                               | 0.0                                                                               | 2.2                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 1.3                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         | 66.5                                                                              | 65.4                                                                              |                                                                                   | 65.1                                                                              | 65.7                                                                              | 50.2                                                                              | 70.0                                                                                | 8.8                                                                                 | 4.7                                                                                 | 66.6                                                                                | 7.4                                                                                 |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 65.9                                                                              |                                                                                   |                                                                                   | 62.7                                                                              |                                                                                   |                                                                                     | 9.2                                                                                 |                                                                                     |                                                                                     | 10.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 17.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.28                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 43.4%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2025 No-Build  
Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 69                                                                                | 23                                                                                | 29                                                                                | 23                                                                                | 65                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 49.3%                                                                             | 16.4%                                                                             | 20.7%                                                                             | 16.4%                                                                             | 46.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 40                                                                                | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                |
| End Time (s)           | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Local Start Time (s)   | 58                                                                                | 77                                                                                | 6                                                                                 | 29                                                                                | 58                                                                                | 81                                                                                |
| Local Yield (s)        | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                         |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 69 s                                                                                       | 23 s                                                                                    | 29 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                         |                                                                                          |
| 23 s                                                                                   | 65 s                                                                                       |                                                                                         |                                                                                          |



Intersection

Int Delay, s/veh 0.6

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR  |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |  |  |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 35                                                                                | 35                                                                                | 795                                                                               | 790                                                                               | 5    |
| Future Vol, veh/h        | 5                                                                                 | 35                                                                                | 35                                                                                | 795                                                                               | 790                                                                               | 5    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 83                                                                                | 83                                                                                | 96                                                                                | 96                                                                                | 97                                                                                | 97   |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1    |
| Mvmt Flow                | 6                                                                                 | 42                                                                                | 36                                                                                | 828                                                                               | 814                                                                               | 5    |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1303   | 410    | 819    |
| Stage 1              | 817    | -      | -      |
| Stage 2              | 486    | -      | -      |
| Critical Hdwy        | 6.8    | 6.9    | 4.12   |
| Critical Hdwy Stg 1  | 5.8    | -      | -      |
| Critical Hdwy Stg 2  | 5.8    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.21   |
| Pot Cap-1 Maneuver   | 155    | 596    | 812    |
| Stage 1              | 400    | -      | -      |
| Stage 2              | 590    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 148    | 596    | 812    |
| Mov Cap-2 Maneuver   | 148    | -      | -      |
| Stage 1              | 382    | -      | -      |
| Stage 2              | 590    | -      | -      |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 13.9 | 0.4 | 0  |
| HCM LOS              | B    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h)      | 812   | -   | 148   | 596   | -   | -   |
| HCM Lane V/C Ratio    | 0.045 | -   | 0.041 | 0.071 | -   | -   |
| HCM Control Delay (s) | 9.6   | -   | 30.4  | 11.5  | -   | -   |
| HCM Lane LOS          | A     | -   | D     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | 0.1   | 0.2   | -   | -   |

1: Hanover St & Site Driveway/Evans Dr  
HCM 6th TWSC

2025 Build  
Weekday AM

Intersection

Int Delay, s/veh 376.7

| Movement                 | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                               | NBR  | SBL  | SBT                                                                                 | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h       | 45   | 60                                                                                | 0    | 5    | 20                                                                                | 530  | 0    | 0                                                                                 | 1    | 210  | 3                                                                                   | 10   |
| Future Vol, veh/h        | 45   | 60                                                                                | 0    | 5    | 20                                                                                | 530  | 0    | 0                                                                                 | 1    | 210  | 3                                                                                   | 10   |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 53   | 0    | 0                                                                                 | 10   | 10   | 0                                                                                   | 0    |
| Sign Control             | Stop | Stop                                                                              | Stop | Stop | Stop                                                                              | Stop | Free | Free                                                                              | Free | Free | Free                                                                                | Free |
| RT Channelized           | -    | -                                                                                 | None | -    | -                                                                                 | None | -    | -                                                                                 | None | -    | -                                                                                   | None |
| Storage Length           | -    | -                                                                                 | -    | -    | -                                                                                 | -    | -    | -                                                                                 | -    | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Grade, %                 | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 90   | 90                                                                                | 90   | 59   | 59                                                                                | 59   | 25   | 25                                                                                | 25   | 67   | 67                                                                                  | 67   |
| Heavy Vehicles, %        | 2    | 2                                                                                 | 2    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 4    | 4                                                                                   | 4    |
| Mvmt Flow                | 50   | 67                                                                                | 0    | 8    | 34                                                                                | 898  | 0    | 0                                                                                 | 4    | 313  | 4                                                                                   | 15   |

| Major/Minor          | Minor2 |       | Minor1 |      | Major1 |      | Major2 |   |   |       |   |   |
|----------------------|--------|-------|--------|------|--------|------|--------|---|---|-------|---|---|
| Conflicting Flow All | 1159   | 652   | 12     | 683  | 657    | 65   | 19     | 0 | 0 | 14    | 0 | 0 |
| Stage 1              | 638    | 638   | -      | 12   | 12     | -    | -      | - | - | -     | - | - |
| Stage 2              | 521    | 14    | -      | 671  | 645    | -    | -      | - | - | -     | - | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22   | 7.1  | 6.5    | 6.2  | 4.1    | - | - | 4.14  | - | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -      | 6.1  | 5.5    | -    | -      | - | - | -     | - | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -      | 6.1  | 5.5    | -    | -      | - | - | -     | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318  | 3.5  | 4      | 3.3  | 2.2    | - | - | 2.236 | - | - |
| Pot Cap-1 Maneuver   | 173    | 387   | 1069   | 366  | 387    | 1005 | 1611   | - | - | 1591  | - | - |
| Stage 1              | 465    | 471   | -      | 1014 | 890    | -    | -      | - | - | -     | - | - |
| Stage 2              | 539    | 884   | -      | 449  | 471    | -    | -      | - | - | -     | - | - |
| Platoon blocked, %   |        |       |        |      |        |      |        | - | - |       | - | - |
| Mov Cap-1 Maneuver   | ~ 6    | 306   | 1069   | 257  | 306    | 945  | 1611   | - | - | 1576  | - | - |
| Mov Cap-2 Maneuver   | ~ 6    | 306   | -      | 257  | 306    | -    | -      | - | - | -     | - | - |
| Stage 1              | 465    | 376   | -      | 1004 | 881    | -    | -      | - | - | -     | - | - |
| Stage 2              | ~ 24   | 875   | -      | 295  | 376    | -    | -      | - | - | -     | - | - |

| Approach                     | EB | WB   | NB | SB  |
|------------------------------|----|------|----|-----|
| HCM Control Delay, \$ 3832.2 |    | 80.4 | 0  | 7.4 |
| HCM LOS                      | F  | F    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR       | EBLn1WBLn1  | SBL   | SBT | SBR |
|-----------------------|------|-----|-----------|-------------|-------|-----|-----|
| Capacity (veh/h)      | 1611 | -   | -         | 14 860      | 1576  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -         | 8.333 1.094 | 0.199 | -   | -   |
| HCM Control Delay (s) | 0    | -   | \$ 3832.2 | 80.4        | 7.8   | 0   | -   |
| HCM Lane LOS          | A    | -   | -         | F F         | A A   | -   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -         | 15.6        | 24.5  | 0.7 | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2025 Build  
Weekday AM

Intersection

| Int Delay, s/veh         | 6.1                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 140                                                                               | 10   | 90                                                                                | 215  | 35   | 30                                                                                |
| Future Vol, veh/h        | 140                                                                               | 10   | 90                                                                                | 215  | 35   | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 57                                                                                | 57   | 84                                                                                | 84   | 83   | 83                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 246                                                                               | 18   | 107                                                                               | 256  | 42   | 36                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 358    | 249    | 0      |
| Stage 1              | 238    | -      | -      |
| Stage 2              | 120    | -      | -      |
| Critical Hdwy        | 6.41   | 6.21   | -      |
| Critical Hdwy Stg 1  | 5.41   | -      | -      |
| Critical Hdwy Stg 2  | 5.41   | -      | -      |
| Follow-up Hdwy       | 3.509  | 3.309  | -      |
| Pot Cap-1 Maneuver   | 642    | 792    | -      |
| Stage 1              | 804    | -      | -      |
| Stage 2              | 908    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 617    | 781    | -      |
| Mov Cap-2 Maneuver   | 617    | -      | -      |
| Stage 1              | 802    | -      | -      |
| Stage 2              | 875    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 14.9 | 0  | 4.4 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL  | SBT   |
|-----------------------|-----|----------|------|-------|
| Capacity (veh/h)      | -   | -        | 626  | 1190  |
| HCM Lane V/C Ratio    | -   | -        | 0.42 | 0.035 |
| HCM Control Delay (s) | -   | -        | 14.9 | 8.1   |
| HCM Lane LOS          | -   | -        | B    | A     |
| HCM 95th %tile Q(veh) | -   | -        | 2.1  | 0.1   |

### 3: Hanover St Ext & North Site Driveway HCM 6th TWSC

2025 Build  
Weekday AM

#### Intersection

| Int Delay, s/veh         | 2.5                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 15                                                                                | 30   | 10   | 90                                                                                | 35                                                                                | 10   |
| Future Vol, veh/h        | 15                                                                                | 30   | 10   | 90                                                                                | 35                                                                                | 10   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 17                                                                                | 33   | 11   | 100                                                                               | 39                                                                                | 11   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 167    | 45     | 50    | 0      | - | 0 |
| Stage 1              | 45     | -      | -     | -      | - | - |
| Stage 2              | 122    | -      | -     | -      | - | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - | - |
| Pot Cap-1 Maneuver   | 823    | 1025   | 1557  | -      | - | - |
| Stage 1              | 977    | -      | -     | -      | - | - |
| Stage 2              | 903    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 817    | 1025   | 1557  | -      | - | - |
| Mov Cap-2 Maneuver   | 817    | -      | -     | -      | - | - |
| Stage 1              | 970    | -      | -     | -      | - | - |
| Stage 2              | 903    | -      | -     | -      | - | - |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 9  | 0.7 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1557  | -   | 945   | -   | -   |
| HCM Lane V/C Ratio    | 0.007 | -   | 0.053 | -   | -   |
| HCM Control Delay (s) | 7.3   | 0   | 9     | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | 0.2   | -   | -   |

4: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

2025 Build  
Weekday AM

Intersection

Int Delay, s/veh 2.3

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 95                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 35   |
| Future Vol, veh/h        | 95                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 35   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 86   | 86                                                                                | 77                                                                                | 77   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 103                                                                               | 5    | 1    | 273                                                                               | 260                                                                               | 45   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 566 | 292 | 313   | 0 | - | 0 |
| Stage 1              | 291 | -   | -     | - | - | - |
| Stage 2              | 275 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 489 | 752 | 1230  | - | - | - |
| Stage 1              | 763 | -   | -     | - | - | - |
| Stage 2              | 776 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 481 | 746 | 1221  | - | - | - |
| Mov Cap-2 Maneuver   | 481 | -   | -     | - | - | - |
| Stage 1              | 756 | -   | -     | - | - | - |
| Stage 2              | 770 | -   | -     | - | - | - |

Approach EB NB SB

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 14.4 | 0 | 0 |
| HCM LOS              | B    |   |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1221  | - | 490   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.222 | - | - |
| HCM Control Delay (s) | 8     | 0 | 14.4  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.8   | - | - |



Intersection

Intersection Delay, s/veh 22.7  
Intersection LOS C

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 135                                                                               | 100  | 85   | 75                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Future Vol, veh/h          | 3    | 135                                                                               | 100  | 85   | 75                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Peak Hour Factor           | 0.69 | 0.69                                                                              | 0.69 | 0.90 | 0.90                                                                              | 0.90 | 0.83 | 0.83                                                                                | 0.83 | 0.66 | 0.66                                                                                | 0.66 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 4    | 196                                                                               | 145  | 94   | 83                                                                                | 56   | 114  | 217                                                                                 | 60   | 45   | 258                                                                                 | 2    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 22.4 |                                                                                   |      | 17.1 |                                                                                   |      | 27.7 |                                                                                     |      | 20.9 |                                                                                     |      |
| HCM LOS                    | C    |                                                                                   |      | C    |                                                                                   |      | D    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 29%   | 1%    | 40%   | 15%   |
| Vol Thru, %            | 55%   | 57%   | 36%   | 85%   |
| Vol Right, %           | 15%   | 42%   | 24%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 325   | 238   | 210   | 201   |
| LT Vol                 | 95    | 3     | 85    | 30    |
| Through Vol            | 180   | 135   | 75    | 170   |
| RT Vol                 | 50    | 100   | 50    | 1     |
| Lane Flow Rate         | 392   | 345   | 233   | 305   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.748 | 0.659 | 0.478 | 0.609 |
| Departure Headway (Hd) | 6.876 | 6.881 | 7.37  | 7.194 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 525   | 524   | 488   | 499   |
| Service Time           | 4.939 | 4.948 | 5.443 | 5.263 |
| HCM Lane V/C Ratio     | 0.747 | 0.658 | 0.477 | 0.611 |
| HCM Control Delay      | 27.7  | 22.4  | 17.1  | 20.9  |
| HCM Lane LOS           | D     | C     | C     | C     |
| HCM 95th-tile Q        | 6.4   | 4.8   | 2.5   | 4     |

# 6: Route 120 & Old Etna Rd/Etna Rd Queues

2025 Build  
Weekday AM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 186                                                                               | 148                                                                               | 110                                                                               | 113                                                                               | 67                                                                                | 52                                                                                | 2645                                                                                | 349                                                                                 | 58                                                                                  | 890                                                                                 |
| v/c Ratio               | 1.32                                                                              | 0.85                                                                              | 0.95                                                                              | 0.99                                                                              | 0.22                                                                              | 0.54                                                                              | 1.20                                                                                | 0.29                                                                                | 0.59                                                                                | 0.40                                                                                |
| Control Delay           | 232.4                                                                             | 82.6                                                                              | 134.3                                                                             | 144.5                                                                             | 11.7                                                                              | 84.0                                                                              | 122.1                                                                               | 1.4                                                                                 | 87.2                                                                                | 13.2                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 232.4                                                                             | 82.6                                                                              | 134.3                                                                             | 144.5                                                                             | 11.7                                                                              | 84.0                                                                              | 122.1                                                                               | 1.4                                                                                 | 87.2                                                                                | 13.2                                                                                |
| Queue Length 50th (ft)  | ~218                                                                              | 96                                                                                | 107                                                                               | 113                                                                               | 0                                                                                 | 47                                                                                | ~1549                                                                               | 8                                                                                   | 52                                                                                  | 203                                                                                 |
| Queue Length 95th (ft)  | #309                                                                              | #164                                                                              | #235                                                                              | #259                                                                              | 43                                                                                | 88                                                                                | #1548                                                                               | 19                                                                                  | 97                                                                                  | 234                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 141                                                                               | 174                                                                               | 116                                                                               | 114                                                                               | 318                                                                               | 113                                                                               | 2201                                                                                | 1185                                                                                | 113                                                                                 | 2225                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.32                                                                              | 0.85                                                                              | 0.95                                                                              | 0.99                                                                              | 0.21                                                                              | 0.46                                                                              | 1.20                                                                                | 0.29                                                                                | 0.51                                                                                | 0.40                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build  
Weekday AM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 145                                                                               | 45                                                                                | 70                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2275                                                                                | 300                                                                                 | 50                                                                                  | 680                                                                                 | 85                                                                                  |
| Future Volume (vph)               | 145                                                                               | 45                                                                                | 70                                                                                | 175                                                                               | 30                                                                                | 70                                                                                | 45                                                                                  | 2275                                                                                | 300                                                                                 | 50                                                                                  | 680                                                                                 | 85                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.91                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.98                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1718                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3472                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.97                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1718                                                                              |                                                                                   | 1631                                                                              | 1577                                                                              | 1459                                                                              | 1770                                                                                | 3539                                                                                | 1583                                                                                | 1770                                                                                | 3472                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.78                                                                              | 0.78                                                                              | 0.78                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                | 0.86                                                                                |
| Adj. Flow (vph)                   | 186                                                                               | 58                                                                                | 90                                                                                | 184                                                                               | 32                                                                                | 74                                                                                | 52                                                                                  | 2645                                                                                | 349                                                                                 | 58                                                                                  | 791                                                                                 | 99                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 56                                                                                | 0                                                                                   | 0                                                                                   | 88                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 186                                                                               | 108                                                                               | 0                                                                                 | 110                                                                               | 111                                                                               | 11                                                                                | 52                                                                                  | 2645                                                                                | 261                                                                                 | 58                                                                                  | 883                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 11.0                                                                              | 11.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              | 23.9                                                                              | 6.7                                                                                 | 87.1                                                                                | 97.1                                                                                | 7.9                                                                                 | 88.3                                                                                |                                                                                     |
| Effective Green, g (s)            | 11.0                                                                              | 11.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              | 23.9                                                                              | 6.7                                                                                 | 87.1                                                                                | 97.1                                                                                | 7.9                                                                                 | 88.3                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.08                                                                              | 0.08                                                                              |                                                                                   | 0.07                                                                              | 0.07                                                                              | 0.17                                                                              | 0.05                                                                                | 0.62                                                                                | 0.69                                                                                | 0.06                                                                                | 0.63                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 141                                                                               | 134                                                                               |                                                                                   | 116                                                                               | 112                                                                               | 249                                                                               | 84                                                                                  | 2201                                                                                | 1097                                                                                | 99                                                                                  | 2189                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.10                                                                             | 0.06                                                                              |                                                                                   | 0.07                                                                              | c0.07                                                                             | 0.01                                                                              | 0.03                                                                                | c0.75                                                                               | 0.16                                                                                | c0.03                                                                               | 0.25                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 1.32                                                                              | 0.81                                                                              |                                                                                   | 0.95                                                                              | 0.99                                                                              | 0.05                                                                              | 0.62                                                                                | 1.20                                                                                | 0.24                                                                                | 0.59                                                                                | 0.40                                                                                |                                                                                     |
| Uniform Delay, d1                 | 64.5                                                                              | 63.5                                                                              |                                                                                   | 64.7                                                                              | 65.0                                                                              | 48.5                                                                              | 65.4                                                                                | 26.5                                                                                | 7.9                                                                                 | 64.5                                                                                | 12.8                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 184.7                                                                             | 27.5                                                                              |                                                                                   | 66.1                                                                              | 82.2                                                                              | 0.0                                                                               | 9.2                                                                                 | 95.4                                                                                | 0.0                                                                                 | 5.6                                                                                 | 0.6                                                                                 |                                                                                     |
| Delay (s)                         | 249.2                                                                             | 91.0                                                                              |                                                                                   | 130.8                                                                             | 147.2                                                                             | 48.5                                                                              | 74.6                                                                                | 121.9                                                                               | 7.9                                                                                 | 70.0                                                                                | 13.4                                                                                |                                                                                     |
| Level of Service                  | F                                                                                 | F                                                                                 |                                                                                   | F                                                                                 | F                                                                                 | D                                                                                 | E                                                                                   | F                                                                                   | A                                                                                   | E                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 179.1                                                                             |                                                                                   |                                                                                   | 118.2                                                                             |                                                                                   |                                                                                     | 108.0                                                                               |                                                                                     |                                                                                     | 16.8                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 95.1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 1.15                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 90.1%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

6: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2025 Build  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 92                                                                                | 17                                                                                | 16                                                                                | 15                                                                                | 92                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 65.7%                                                                             | 12.1%                                                                             | 11.4%                                                                             | 10.7%                                                                             | 65.7%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 21                                                                                | 36                                                                                | 128                                                                               | 5                                                                                 | 21                                                                                | 36                                                                                |
| End Time (s)           | 36                                                                                | 128                                                                               | 5                                                                                 | 21                                                                                | 36                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 30                                                                                | 122                                                                               | 139                                                                               | 15                                                                                | 30                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 30                                                                                | 122                                                                               | 139                                                                               | 15                                                                                | 30                                                                                | 122                                                                               |
| Local Start Time (s)   | 39                                                                                | 54                                                                                | 6                                                                                 | 23                                                                                | 39                                                                                | 54                                                                                |
| Local Yield (s)        | 48                                                                                | 0                                                                                 | 17                                                                                | 33                                                                                | 48                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 48                                                                                | 0                                                                                 | 17                                                                                | 33                                                                                | 48                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 92 s                                                                                       | 17 s                                                                                     | 16 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 92 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 18.1

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 0                                                                                 | 290                                                                               | 505                                                                               | 2935                                                                              | 1210                                                                              | 75                                                                                |
| Future Vol, veh/h        | 0                                                                                 | 290                                                                               | 505                                                                               | 2935                                                                              | 1210                                                                              | 75                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 72                                                                                | 72                                                                                | 89                                                                                | 89                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 4                                                                                 | 4                                                                                 |
| Mvmt Flow                | 0                                                                                 | 403                                                                               | 567                                                                               | 3298                                                                              | 1301                                                                              | 81                                                                                |

| Major/Minor          | Minor2  | Major1 | Major2 |
|----------------------|---------|--------|--------|
| Conflicting Flow All | 4125    | 691    | 1382   |
| Stage 1              | 1342    | -      | -      |
| Stage 2              | 2783    | -      | -      |
| Critical Hdwy        | 6.82    | 6.92   | 4.14   |
| Critical Hdwy Stg 1  | 5.82    | -      | -      |
| Critical Hdwy Stg 2  | 5.82    | -      | -      |
| Follow-up Hdwy       | 3.51    | 3.31   | 2.22   |
| Pot Cap-1 Maneuver   | 2 ~ 389 | ~ 492  | -      |
| Stage 1              | 210     | -      | -      |
| Stage 2              | 33      | -      | -      |
| Platoon blocked, %   |         |        | -      |
| Mov Cap-1 Maneuver   | 0 ~ 389 | ~ 492  | -      |
| Mov Cap-2 Maneuver   | 0       | -      | -      |
| Stage 1              | 0       | -      | -      |
| Stage 2              | 33      | -      | -      |

| Approach             | EB   | NB   | SB |
|----------------------|------|------|----|
| HCM Control Delay, s | 88.4 | 17.2 | 0  |
| HCM LOS              | F    |      |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|-------|-----|-------|-------|-----|-----|
| Capacity (veh/h)      | ~ 492 | -   | -     | 389   | -   | -   |
| HCM Lane V/C Ratio    | 1.153 | -   | -     | 1.035 | -   | -   |
| HCM Control Delay (s) | 117.4 | -   | 0     | 88.4  | -   | -   |
| HCM Lane LOS          | F     | -   | A     | F     | -   | -   |
| HCM 95th %tile Q(veh) | 20    | -   | -     | 13.2  | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Intersection

Int Delay, s/veh 8.3

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|                          |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 20   | 30   | 0    | 1    | 45   | 75   | 0    | 5    | 5    | 95   | 5    | 25   |
| Future Vol, veh/h        | 20   | 30   | 0    | 1    | 45   | 75   | 0    | 5    | 5    | 95   | 5    | 25   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 81   | 81   | 81   | 50   | 50   | 50   | 73   | 73   | 73   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 22   | 33   | 0    | 1    | 56   | 93   | 0    | 10   | 10   | 130  | 7    | 34   |

| Major/Minor          | Minor2 |       | Minor1 |       | Major1 |       | Major2 |   |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|
| Conflicting Flow All | 377    | 304   | 24     | 316   | 316    | 18    | 41     | 0 |
| Stage 1              | 284    | 284   | -      | 15    | 15     | -     | -      | - |
| Stage 2              | 93     | 20    | -      | 301   | 301    | -     | -      | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22   | 7.12  | 6.52   | 6.22  | 4.1    | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318  | 3.518 | 4.018  | 3.318 | 2.2    | - |
| Pot Cap-1 Maneuver   | 580    | 609   | 1052   | 637   | 600    | 1061  | 1581   | - |
| Stage 1              | 723    | 676   | -      | 1005  | 883    | -     | -      | - |
| Stage 2              | 914    | 879   | -      | 708   | 665    | -     | -      | - |
| Platoon blocked, %   |        |       |        |       |        |       |        | - |
| Mov Cap-1 Maneuver   | 456    | 558   | 1052   | 569   | 550    | 1058  | 1581   | - |
| Mov Cap-2 Maneuver   | 456    | 558   | -      | 569   | 550    | -     | -      | - |
| Stage 1              | 723    | 620   | -      | 1005  | 883    | -     | -      | - |
| Stage 2              | 779    | 879   | -      | 614   | 610    | -     | -      | - |

| Approach             | EB   | WB   | NB | SB  |
|----------------------|------|------|----|-----|
| HCM Control Delay, s | 12.9 | 10.7 | 0  | 5.6 |
| HCM LOS              | B    | B    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 1581 | -   | -   | 512        | 783   | 1609  | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.109      | 0.191 | 0.081 | -   |
| HCM Control Delay (s) | 0    | -   | -   | 12.9       | 10.7  | 7.4   | 0   |
| HCM Lane LOS          | A    | -   | -   | B          | B     | A     | A   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.4        | 0.7   | 0.3   | -   |

Intersection

| Int Delay, s/veh         | 3.3                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 55                                                                                | 25   | 25                                                                                | 75   | 20   | 45                                                                                |
| Future Vol, veh/h        | 55                                                                                | 25   | 25                                                                                | 75   | 20   | 45                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 67                                                                                | 30   | 42                                                                                | 127  | 25   | 56                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 212    | 106    | 0      | 0 | 169  |
| Stage 1              | 106    | -      | -      | - | -    |
| Stage 2              | 106    | -      | -      | - | -    |
| Critical Hdwy        | 6.4    | 6.2    | -      | - | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | -      | - | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | -      | - | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | -      | - | 2.2  |
| Pot Cap-1 Maneuver   | 781    | 954    | -      | - | 1421 |
| Stage 1              | 923    | -      | -      | - | -    |
| Stage 2              | 923    | -      | -      | - | -    |
| Platoon blocked, %   |        |        | -      | - | -    |
| Mov Cap-1 Maneuver   | 767    | 954    | -      | - | 1421 |
| Mov Cap-2 Maneuver   | 767    | -      | -      | - | -    |
| Stage 1              | 923    | -      | -      | - | -    |
| Stage 2              | 906    | -      | -      | - | -    |

| Approach             | WB | NB | SB  |
|----------------------|----|----|-----|
| HCM Control Delay, s | 10 | 0  | 2.3 |
| HCM LOS              | B  |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 817   | 1421  |
| HCM Lane V/C Ratio    | -   | -        | 0.119 | 0.018 |
| HCM Control Delay (s) | -   | -        | 10    | 7.6   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.4   | 0.1   |

### 3: Hanover St Ext & North Site Driveway HCM 6th TWSC

2025 Build  
Weekday PM

#### Intersection

| Int Delay, s/veh         | 2.6                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 15   | 25   | 25                                                                                | 50                                                                                | 20   |
| Future Vol, veh/h        | 5                                                                                 | 15   | 25   | 25                                                                                | 50                                                                                | 20   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 6                                                                                 | 17   | 28   | 28                                                                                | 56                                                                                | 22   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 151    | 67     | 78    | 0      | - | 0 |
| Stage 1              | 67     | -      | -     | -      | - | - |
| Stage 2              | 84     | -      | -     | -      | - | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - | - |
| Pot Cap-1 Maneuver   | 841    | 997    | 1520  | -      | - | - |
| Stage 1              | 956    | -      | -     | -      | - | - |
| Stage 2              | 939    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 825    | 997    | 1520  | -      | - | - |
| Mov Cap-2 Maneuver   | 825    | -      | -     | -      | - | - |
| Stage 1              | 938    | -      | -     | -      | - | - |
| Stage 2              | 939    | -      | -     | -      | - | - |

| Approach             | EB  | NB  | SB |
|----------------------|-----|-----|----|
| HCM Control Delay, s | 8.9 | 3.7 | 0  |
| HCM LOS              | A   |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1520  | -   | 948   | -   | -   |
| HCM Lane V/C Ratio    | 0.018 | -   | 0.023 | -   | -   |
| HCM Control Delay (s) | 7.4   | 0   | 8.9   | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | 0.1   | -   | -   |

# 4: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2025 Build  
Weekday PM

## Intersection

Int Delay, s/veh 0.9

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 25                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 60   |
| Future Vol, veh/h        | 25                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 60   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 56                                                                                | 56   | 97   | 97                                                                                | 75                                                                                | 75   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 45                                                                                | 2    | 1    | 201                                                                               | 520                                                                               | 80   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 764 | 561 | 601   | 0 | - | 0 |
| Stage 1              | 561 | -   | -     | - | - | - |
| Stage 2              | 203 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.16  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.254 | - | - | - |
| Pot Cap-1 Maneuver   | 375 | 531 | 957   | - | - | - |
| Stage 1              | 575 | -   | -     | - | - | - |
| Stage 2              | 836 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 374 | 530 | 956   | - | - | - |
| Mov Cap-2 Maneuver   | 374 | -   | -     | - | - | - |
| Stage 1              | 574 | -   | -     | - | - | - |
| Stage 2              | 835 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 15.9 | 0 | 0 |
| HCM LOS              | C    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 956   | - | 378   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.123 | - | - |
| HCM Control Delay (s) | 8.8   | 0 | 15.9  | - | - |
| HCM Lane LOS          | A     | A | C     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.4   | - | - |

Intersection

Intersection Delay, s/veh 23.6  
Intersection LOS C

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 45                                                                                | 45   | 125  | 55                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Future Vol, veh/h          | 3    | 45                                                                                | 45   | 125  | 55                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Peak Hour Factor           | 0.45 | 0.45                                                                              | 0.45 | 0.95 | 0.95                                                                              | 0.95 | 0.77 | 0.77                                                                                | 0.77 | 0.76 | 0.76                                                                                | 0.76 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 7    | 100                                                                               | 100  | 132  | 58                                                                                | 37   | 32   | 201                                                                                 | 91   | 26   | 461                                                                                 | 7    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 14.3 |                                                                                   |      | 15.8 |                                                                                   |      | 18   |                                                                                     |      | 34.7 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | C    |                                                                                   |      | C    |                                                                                     |      | D    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 10%   | 3%    | 58%   | 5%    |
| Vol Thru, %            | 62%   | 48%   | 26%   | 93%   |
| Vol Right, %           | 28%   | 48%   | 16%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 250   | 93    | 215   | 375   |
| LT Vol                 | 25    | 3     | 125   | 20    |
| Through Vol            | 155   | 45    | 55    | 350   |
| RT Vol                 | 70    | 45    | 35    | 5     |
| Lane Flow Rate         | 325   | 207   | 226   | 493   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.578 | 0.392 | 0.445 | 0.848 |
| Departure Headway (Hd) | 6.408 | 6.823 | 7.072 | 6.189 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 558   | 523   | 507   | 582   |
| Service Time           | 4.496 | 4.92  | 5.165 | 4.264 |
| HCM Lane V/C Ratio     | 0.582 | 0.396 | 0.446 | 0.847 |
| HCM Control Delay      | 18    | 14.3  | 15.8  | 34.7  |
| HCM Lane LOS           | C     | B     | C     | D     |
| HCM 95th-tile Q        | 3.7   | 1.8   | 2.3   | 9.1   |



6: Route 120 & Old Etna Rd/Etna Rd  
Queues

2025 Build  
Weekday PM

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 90                                                                                | 102                                                                               | 160                                                                               | 160                                                                               | 58                                                                                | 16                                                                                | 824                                                                                 | 133                                                                                 | 62                                                                                  | 2078                                                                                |
| v/c Ratio               | 0.64                                                                              | 0.52                                                                              | 0.77                                                                              | 0.80                                                                              | 0.15                                                                              | 0.21                                                                              | 0.41                                                                                | 0.12                                                                                | 0.55                                                                                | 0.93                                                                                |
| Control Delay           | 82.7                                                                              | 33.0                                                                              | 82.2                                                                              | 85.8                                                                              | 6.7                                                                               | 70.7                                                                              | 19.6                                                                                | 0.9                                                                                 | 81.5                                                                                | 33.3                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 82.7                                                                              | 33.0                                                                              | 82.2                                                                              | 85.8                                                                              | 6.7                                                                               | 70.7                                                                              | 19.6                                                                                | 0.9                                                                                 | 81.5                                                                                | 33.3                                                                                |
| Queue Length 50th (ft)  | 81                                                                                | 29                                                                                | 149                                                                               | 156                                                                               | 0                                                                                 | 14                                                                                | 222                                                                                 | 0                                                                                   | 56                                                                                  | 761                                                                                 |
| Queue Length 95th (ft)  | 127                                                                               | 75                                                                                | 217                                                                               | 227                                                                               | 25                                                                                | 40                                                                                | 310                                                                                 | 11                                                                                  | 105                                                                                 | #1292                                                                               |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 179                                                                               | 231                                                                               | 261                                                                               | 251                                                                               | 405                                                                               | 114                                                                               | 2008                                                                                | 1187                                                                                | 140                                                                                 | 2236                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.50                                                                              | 0.44                                                                              | 0.61                                                                              | 0.64                                                                              | 0.14                                                                              | 0.14                                                                              | 0.41                                                                                | 0.11                                                                                | 0.44                                                                                | 0.93                                                                                |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build  
Weekday PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 75                                                                                | 25                                                                                | 60                                                                                | 260                                                                               | 10                                                                                | 55                                                                                | 15                                                                                  | 775                                                                                 | 125                                                                                 | 60                                                                                  | 1925                                                                                | 90                                                                                  |
| Future Volume (vph)               | 75                                                                                | 25                                                                                | 60                                                                                | 260                                                                               | 10                                                                                | 55                                                                                | 15                                                                                  | 775                                                                                 | 125                                                                                 | 60                                                                                  | 1925                                                                                | 90                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3547                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 1690                                                                              |                                                                                   | 1663                                                                              | 1597                                                                              | 1488                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3547                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 90                                                                                | 30                                                                                | 72                                                                                | 302                                                                               | 12                                                                                | 64                                                                                | 16                                                                                  | 824                                                                                 | 133                                                                                 | 62                                                                                  | 1985                                                                                | 93                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 64                                                                                | 0                                                                                 | 0                                                                                 | 1                                                                                 | 45                                                                                | 0                                                                                   | 0                                                                                   | 42                                                                                  | 0                                                                                   | 2                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 90                                                                                | 38                                                                                | 0                                                                                 | 160                                                                               | 159                                                                               | 13                                                                                | 16                                                                                  | 824                                                                                 | 91                                                                                  | 62                                                                                  | 2076                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 11.0                                                                              | 11.0                                                                              |                                                                                   | 17.6                                                                              | 17.6                                                                              | 32.4                                                                              | 2.8                                                                                 | 78.6                                                                                | 96.2                                                                                | 8.8                                                                                 | 84.6                                                                                |                                                                                     |
| Effective Green, g (s)            | 11.0                                                                              | 11.0                                                                              |                                                                                   | 17.6                                                                              | 17.6                                                                              | 32.4                                                                              | 2.8                                                                                 | 78.6                                                                                | 96.2                                                                                | 8.8                                                                                 | 84.6                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.08                                                                              | 0.08                                                                              |                                                                                   | 0.13                                                                              | 0.13                                                                              | 0.23                                                                              | 0.02                                                                                | 0.56                                                                                | 0.69                                                                                | 0.06                                                                                | 0.60                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 141                                                                               | 132                                                                               |                                                                                   | 209                                                                               | 200                                                                               | 344                                                                               | 35                                                                                  | 2006                                                                                | 1098                                                                                | 112                                                                                 | 2143                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.05                                                                             | 0.02                                                                              |                                                                                   | 0.10                                                                              | c0.10                                                                             | 0.01                                                                              | 0.01                                                                                | 0.23                                                                                | 0.06                                                                                | c0.03                                                                               | c0.59                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.64                                                                              | 0.29                                                                              |                                                                                   | 0.77                                                                              | 0.80                                                                              | 0.04                                                                              | 0.46                                                                                | 0.41                                                                                | 0.08                                                                                | 0.55                                                                                | 0.97                                                                                |                                                                                     |
| Uniform Delay, d1                 | 62.6                                                                              | 60.8                                                                              |                                                                                   | 59.2                                                                              | 59.5                                                                              | 41.7                                                                              | 67.8                                                                                | 17.5                                                                                | 7.3                                                                                 | 63.7                                                                                | 26.4                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 6.8                                                                               | 0.4                                                                               |                                                                                   | 13.9                                                                              | 18.1                                                                              | 0.0                                                                               | 3.4                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 3.3                                                                                 | 13.4                                                                                |                                                                                     |
| Delay (s)                         | 69.4                                                                              | 61.3                                                                              |                                                                                   | 73.1                                                                              | 77.6                                                                              | 41.7                                                                              | 71.3                                                                                | 18.1                                                                                | 7.3                                                                                 | 67.0                                                                                | 39.8                                                                                |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 65.1                                                                              |                                                                                   |                                                                                   | 70.2                                                                              |                                                                                   |                                                                                     | 17.5                                                                                |                                                                                     |                                                                                     | 40.6                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 38.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.92                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 80.8%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

6: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2025 Build  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 77                                                                                | 20                                                                                | 28                                                                                | 17                                                                                | 75                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 55.0%                                                                             | 14.3%                                                                             | 20.0%                                                                             | 12.1%                                                                             | 53.6%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 36                                                                                | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                |
| End Time (s)           | 51                                                                                | 128                                                                               | 8                                                                                 | 36                                                                                | 53                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 45                                                                                | 122                                                                               | 2                                                                                 | 30                                                                                | 47                                                                                | 122                                                                               |
| Local Start Time (s)   | 54                                                                                | 69                                                                                | 6                                                                                 | 26                                                                                | 54                                                                                | 71                                                                                |
| Local Yield (s)        | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 63                                                                                | 0                                                                                 | 20                                                                                | 48                                                                                | 65                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 130  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 77 s                                                                                       | 20 s                                                                                     | 28 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 75 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 7.9

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 5                                                                                 | 180                                                                               | 135                                                                               | 1150                                                                              | 2840                                                                              | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 180                                                                               | 135                                                                               | 1150                                                                              | 2840                                                                              | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 86                                                                                | 86                                                                                | 98                                                                                | 98                                                                                | 93                                                                                | 93                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1                                                                                 |
| Mvmt Flow                | 6                                                                                 | 209                                                                               | 138                                                                               | 1173                                                                              | 3054                                                                              | 16                                                                                |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 3926   | 1536   | 3071   |
| Stage 1              | 3063   | -      | -      |
| Stage 2              | 863    | -      | -      |
| Critical Hdwy        | 6.8    | 6.92   | 4.14   |
| Critical Hdwy Stg 1  | 5.8    | -      | -      |
| Critical Hdwy Stg 2  | 5.8    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.31   | 2.22   |
| Pot Cap-1 Maneuver   | ~ 2    | ~ 106  | ~ 106  |
| Stage 1              | 23     | -      | -      |
| Stage 2              | 378    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 0      | ~ 106  | ~ 106  |
| Mov Cap-2 Maneuver   | 0      | -      | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 378    | -      | -      |

| Approach             | EB | NB   | SB |
|----------------------|----|------|----|
| HCM Control Delay, s |    | 27.6 | 0  |
| HCM LOS              | -  |      |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | EBLn2  | SBT | SBR |
|-----------------------|-------|-----|-------|--------|-----|-----|
| Capacity (veh/h)      | ~ 106 | -   | -     | 106    | -   | -   |
| HCM Lane V/C Ratio    | 1.3   | -   | -     | 1.975  | -   | -   |
| HCM Control Delay (s) | 262.6 | -   | -     | \$ 538 | -   | -   |
| HCM Lane LOS          | F     | -   | -     | F      | -   | -   |
| HCM 95th %tile Q(veh) | 9.4   | -   | -     | 17.4   | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

|                          |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 8    |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 25   | 35   | 0    | 0    | 40   | 30   | 0    | 0    | 1    | 20   | 1    | 20   |
| Future Vol, veh/h        | 25   | 35   | 0    | 0    | 40   | 30   | 0    | 0    | 1    | 20   | 1    | 20   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 67   | 67   | 67   | 25   | 25   | 25   | 64   | 64   | 64   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 28   | 39   | 0    | 0    | 60   | 45   | 0    | 0    | 4    | 31   | 2    | 31   |

|                      |        |       |       |        |     |      |        |   |   |        |   |   |
|----------------------|--------|-------|-------|--------|-----|------|--------|---|---|--------|---|---|
| Major/Minor          | Minor2 |       |       | Minor1 |     |      | Major1 |   |   | Major2 |   |   |
| Conflicting Flow All | 144    | 84    | 18    | 101    | 97  | 11   | 33     | 0 | 0 | 4      | 0 | 0 |
| Stage 1              | 80     | 80    | -     | 2      | 2   | -    | -      | - | - | -      | - | - |
| Stage 2              | 64     | 4     | -     | 99     | 95  | -    | -      | - | - | -      | - | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22  | 7.1    | 6.5 | 6.2  | 4.1    | - | - | 4.1    | - | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -     | 6.1    | 5.5 | -    | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -     | 6.1    | 5.5 | -    | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 3.5    | 4   | 3.3  | 2.2    | - | - | 2.2    | - | - |
| Pot Cap-1 Maneuver   | 825    | 806   | 1061  | 885    | 797 | 1076 | 1592   | - | - | 1631   | - | - |
| Stage 1              | 929    | 828   | -     | 1026   | 898 | -    | -      | - | - | -      | - | - |
| Stage 2              | 947    | 892   | -     | 912    | 820 | -    | -      | - | - | -      | - | - |
| Platoon blocked, %   |        |       |       |        |     |      |        | - | - | -      | - | - |
| Mov Cap-1 Maneuver   | 728    | 791   | 1061  | 840    | 782 | 1067 | 1592   | - | - | 1631   | - | - |
| Mov Cap-2 Maneuver   | 728    | 791   | -     | 840    | 782 | -    | -      | - | - | -      | - | - |
| Stage 1              | 929    | 812   | -     | 1026   | 898 | -    | -      | - | - | -      | - | - |
| Stage 2              | 840    | 892   | -     | 852    | 804 | -    | -      | - | - | -      | - | - |

|                      |      |     |    |     |
|----------------------|------|-----|----|-----|
| Approach             | EB   | WB  | NB | SB  |
| HCM Control Delay, s | 10.2 | 9.6 | 0  | 3.5 |
| HCM LOS              | B    | A   |    |     |

|                       |      |     |     |       |       |       |     |     |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
| Capacity (veh/h)      | 1592 | -   | -   | 763   | 883   | 1631  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.087 | 0.118 | 0.019 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 10.2  | 9.6   | 7.2   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | B     | A     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.3   | 0.4   | 0.1   | -   | -   |



2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

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Sat MIDDAY

Intersection

| Int Delay, s/veh         | 4.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 25                                                                                | 20   | 25                                                                                | 30   | 20   | 15                                                                                |
| Future Vol, veh/h        | 25                                                                                | 20   | 25                                                                                | 30   | 20   | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 63                                                                                | 63   | 72                                                                                | 72   | 58   | 58                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 40                                                                                | 32   | 35                                                                                | 42   | 34   | 26                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |      |
|----------------------|--------|--------|--------|---|------|
| Conflicting Flow All | 150    | 58     | 0      | 0 | 77   |
| Stage 1              | 56     | -      | -      | - | -    |
| Stage 2              | 94     | -      | -      | - | -    |
| Critical Hdwy        | 6.4    | 6.2    | -      | - | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | -      | - | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | -      | - | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | -      | - | 2.2  |
| Pot Cap-1 Maneuver   | 847    | 1014   | -      | - | 1535 |
| Stage 1              | 972    | -      | -      | - | -    |
| Stage 2              | 935    | -      | -      | - | -    |
| Platoon blocked, %   |        |        | -      | - | -    |
| Mov Cap-1 Maneuver   | 828    | 1012   | -      | - | 1535 |
| Mov Cap-2 Maneuver   | 828    | -      | -      | - | -    |
| Stage 1              | 972    | -      | -      | - | -    |
| Stage 2              | 914    | -      | -      | - | -    |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.3 | 0  | 4.2 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 901   | 1535  |
| HCM Lane V/C Ratio    | -   | -        | 0.079 | 0.022 |
| HCM Control Delay (s) | -   | -        | 9.3   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.3   | 0.1   |

### 3: Hanover St Ext & North Site Driveway HCM 6th TWSC

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#### Intersection

| Int Delay, s/veh         | 3.8                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 20   | 20   | 25                                                                                | 15                                                                                | 20   |
| Future Vol, veh/h        | 10                                                                                | 20   | 20   | 25                                                                                | 15                                                                                | 20   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 11                                                                                | 22   | 22   | 28                                                                                | 17                                                                                | 22   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 100    | 28     | 39    | 0      | - | 0 |
| Stage 1              | 28     | -      | -     | -      | - | - |
| Stage 2              | 72     | -      | -     | -      | - | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - | - |
| Pot Cap-1 Maneuver   | 899    | 1047   | 1571  | -      | - | - |
| Stage 1              | 995    | -      | -     | -      | - | - |
| Stage 2              | 951    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 886    | 1047   | 1571  | -      | - | - |
| Mov Cap-2 Maneuver   | 886    | -      | -     | -      | - | - |
| Stage 1              | 981    | -      | -     | -      | - | - |
| Stage 2              | 951    | -      | -     | -      | - | - |

| Approach             | EB  | NB  | SB |
|----------------------|-----|-----|----|
| HCM Control Delay, s | 8.8 | 3.3 | 0  |
| HCM LOS              | A   |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1571  | -   | 987   | -   | -   |
| HCM Lane V/C Ratio    | 0.014 | -   | 0.034 | -   | -   |
| HCM Control Delay (s) | 7.3   | 0   | 8.8   | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | 0.1   | -   | -   |

4: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

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Sat MIDDAY

Intersection

Int Delay, s/veh 1.5

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 30                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 30   |
| Future Vol, veh/h        | 30                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 30   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 75                                                                                | 75   | 64   | 64                                                                                | 89                                                                                | 89   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 40                                                                                | 0    | 0    | 94                                                                                | 90                                                                                | 34   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |      |   |   |   |
|----------------------|-----|-----|------|---|---|---|
| Conflicting Flow All | 204 | 110 | 124  | 0 | - | 0 |
| Stage 1              | 107 | -   | -    | - | - | - |
| Stage 2              | 97  | -   | -    | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.1  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.2  | - | - | - |
| Pot Cap-1 Maneuver   | 789 | 949 | 1475 | - | - | - |
| Stage 1              | 922 | -   | -    | - | - | - |
| Stage 2              | 932 | -   | -    | - | - | - |
| Platoon blocked, %   |     |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 789 | 946 | 1475 | - | - | - |
| Mov Cap-2 Maneuver   | 789 | -   | -    | - | - | - |
| Stage 1              | 922 | -   | -    | - | - | - |
| Stage 2              | 932 | -   | -    | - | - | - |

Approach EB NB SB

|                      |     |   |   |
|----------------------|-----|---|---|
| HCM Control Delay, s | 9.8 | 0 | 0 |
| HCM LOS              | A   |   |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |      |   |       |   |   |
|-----------------------|------|---|-------|---|---|
| Capacity (veh/h)      | 1475 | - | 789   | - | - |
| HCM Lane V/C Ratio    | -    | - | 0.051 | - | - |
| HCM Control Delay (s) | 0    | - | 9.8   | - | - |
| HCM Lane LOS          | A    | - | A     | - | - |
| HCM 95th %tile Q(veh) | 0    | - | 0.2   | - | - |

Intersection

Intersection Delay, s/veh 8.2  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 50                                                                                | 5    | 60   | 45                                                                                | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 50                                                                                | 5    | 60   | 45                                                                                | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Peak Hour Factor    | 0.60 | 0.60                                                                              | 0.60 | 0.82 | 0.82                                                                              | 0.82 | 0.74 | 0.74                                                                                | 0.74 | 0.88 | 0.88                                                                                | 0.88 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 83                                                                                | 8    | 73   | 55                                                                                | 12   | 3    | 68                                                                                  | 41   | 2    | 80                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB | WB  | NB | SB  |
|----------------------------|----|-----|----|-----|
| Opposing Approach          | WB | EB  | SB | NB  |
| Opposing Lanes             | 1  | 1   | 1  | 1   |
| Conflicting Approach Left  | SB | NB  | EB | WB  |
| Conflicting Lanes Left     | 1  | 1   | 1  | 1   |
| Conflicting Approach Right | NB | SB  | WB | EB  |
| Conflicting Lanes Right    | 1  | 1   | 1  | 1   |
| HCM Control Delay          | 8  | 8.5 | 8  | 8.1 |
| HCM LOS                    | A  | A   | A  | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 2%    | 0%    | 52%   | 3%    |
| Vol Thru, %            | 61%   | 91%   | 39%   | 97%   |
| Vol Right, %           | 37%   | 9%    | 9%    | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 82    | 55    | 115   | 72    |
| LT Vol                 | 2     | 0     | 60    | 2     |
| Through Vol            | 50    | 50    | 45    | 70    |
| RT Vol                 | 30    | 5     | 10    | 0     |
| Lane Flow Rate         | 111   | 92    | 140   | 82    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.133 | 0.113 | 0.175 | 0.104 |
| Departure Headway (Hd) | 4.315 | 4.444 | 4.493 | 4.564 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 832   | 808   | 799   | 786   |
| Service Time           | 2.337 | 2.466 | 2.515 | 2.586 |
| HCM Lane V/C Ratio     | 0.133 | 0.114 | 0.175 | 0.104 |
| HCM Control Delay      | 8     | 8     | 8.5   | 8.1   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.5   | 0.4   | 0.6   | 0.3   |

6: Route 120 & Old Etna Rd/Etna Rd  
Queues

2025 Build  
Sat MIDDAY

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 73                                                                                | 27                                                                                | 58                                                                                | 59                                                                                | 25                                                                                | 11                                                                                | 583                                                                                 | 94                                                                                  | 31                                                                                  | 568                                                                                 |
| v/c Ratio               | 0.57                                                                              | 0.20                                                                              | 0.53                                                                              | 0.55                                                                              | 0.09                                                                              | 0.15                                                                              | 0.24                                                                                | 0.08                                                                                | 0.35                                                                                | 0.23                                                                                |
| Control Delay           | 79.1                                                                              | 31.6                                                                              | 78.9                                                                              | 78.6                                                                              | 0.6                                                                               | 69.0                                                                              | 11.5                                                                                | 0.9                                                                                 | 74.2                                                                                | 9.1                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 79.1                                                                              | 31.6                                                                              | 78.9                                                                              | 78.6                                                                              | 0.6                                                                               | 69.0                                                                              | 11.5                                                                                | 0.9                                                                                 | 74.2                                                                                | 9.1                                                                                 |
| Queue Length 50th (ft)  | 66                                                                                | 6                                                                                 | 54                                                                                | 56                                                                                | 0                                                                                 | 10                                                                                | 113                                                                                 | 0                                                                                   | 28                                                                                  | 76                                                                                  |
| Queue Length 95th (ft)  | 95                                                                                | 28                                                                                | 101                                                                               | 104                                                                               | 0                                                                                 | 32                                                                                | 180                                                                                 | 10                                                                                  | 62                                                                                  | 165                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   | 473                                                                               |                                                                                   |                                                                                   | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                               |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 215                                                                               | 219                                                                               | 265                                                                               | 256                                                                               | 390                                                                               | 167                                                                               | 2419                                                                                | 1350                                                                                | 216                                                                                 | 2505                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.34                                                                              | 0.12                                                                              | 0.22                                                                              | 0.23                                                                              | 0.06                                                                              | 0.07                                                                              | 0.24                                                                                | 0.07                                                                                | 0.14                                                                                | 0.23                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2025 Build  
Sat MIDDAY

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)              | 55                                                                                | 5                                                                                 | 15                                                                                | 95                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 525                                                                                 | 85                                                                                  | 30                                                                                  | 495                                                                                 | 50                                                                                  |
| Future Volume (vph)               | 55                                                                                | 5                                                                                 | 15                                                                                | 95                                                                                | 5                                                                                 | 25                                                                                | 10                                                                                  | 525                                                                                 | 85                                                                                  | 30                                                                                  | 495                                                                                 | 50                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.91                                                                              | 0.95                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 0.89                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3518                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 1664                                                                              |                                                                                   | 1615                                                                              | 1550                                                                              | 1445                                                                              | 1805                                                                                | 3610                                                                                | 1615                                                                                | 1787                                                                                | 3518                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.75                                                                              | 0.75                                                                              | 0.75                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 73                                                                                | 7                                                                                 | 20                                                                                | 108                                                                               | 6                                                                                 | 28                                                                                | 11                                                                                  | 583                                                                                 | 94                                                                                  | 31                                                                                  | 516                                                                                 | 52                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 19                                                                                | 0                                                                                 | 0                                                                                 | 2                                                                                 | 21                                                                                | 0                                                                                   | 0                                                                                   | 26                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 73                                                                                | 8                                                                                 | 0                                                                                 | 58                                                                                | 57                                                                                | 4                                                                                 | 11                                                                                  | 583                                                                                 | 68                                                                                  | 31                                                                                  | 565                                                                                 | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 3%                                                                                | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                |                                                                                   | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.6                                                                               | 9.6                                                                               | 21.6                                                                              | 2.6                                                                                 | 91.4                                                                                | 101.0                                                                               | 6.0                                                                                 | 94.8                                                                                |                                                                                     |
| Effective Green, g (s)            | 9.0                                                                               | 9.0                                                                               |                                                                                   | 9.6                                                                               | 9.6                                                                               | 21.6                                                                              | 2.6                                                                                 | 91.4                                                                                | 101.0                                                                               | 6.0                                                                                 | 94.8                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              |                                                                                   | 0.07                                                                              | 0.07                                                                              | 0.15                                                                              | 0.02                                                                                | 0.65                                                                                | 0.72                                                                                | 0.04                                                                                | 0.68                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 114                                                                               | 106                                                                               |                                                                                   | 110                                                                               | 106                                                                               | 222                                                                               | 33                                                                                  | 2356                                                                                | 1165                                                                                | 76                                                                                  | 2382                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.04                                                                             | 0.00                                                                              |                                                                                   | 0.04                                                                              | c0.04                                                                             | 0.00                                                                              | 0.01                                                                                | c0.16                                                                               | 0.04                                                                                | c0.02                                                                               | c0.16                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.64                                                                              | 0.08                                                                              |                                                                                   | 0.53                                                                              | 0.54                                                                              | 0.02                                                                              | 0.33                                                                                | 0.25                                                                                | 0.06                                                                                | 0.41                                                                                | 0.24                                                                                |                                                                                     |
| Uniform Delay, d1                 | 63.9                                                                              | 61.6                                                                              |                                                                                   | 63.0                                                                              | 63.1                                                                              | 50.2                                                                              | 67.8                                                                                | 10.1                                                                                | 5.7                                                                                 | 65.3                                                                                | 8.7                                                                                 |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 8.8                                                                               | 0.1                                                                               |                                                                                   | 2.1                                                                               | 2.6                                                                               | 0.0                                                                               | 2.2                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 1.3                                                                                 | 0.2                                                                                 |                                                                                     |
| Delay (s)                         | 72.8                                                                              | 61.7                                                                              |                                                                                   | 65.1                                                                              | 65.7                                                                              | 50.2                                                                              | 70.0                                                                                | 10.3                                                                                | 5.7                                                                                 | 66.6                                                                                | 8.9                                                                                 |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 69.8                                                                              |                                                                                   |                                                                                   | 62.7                                                                              |                                                                                   |                                                                                     | 10.6                                                                                |                                                                                     |                                                                                     | 11.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 19.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.31                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 44.2%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# 6: Route 120 & Old Etna Rd/Etna Rd Timing Report, Sorted By Phase

2025 Build  
Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 69                                                                                | 23                                                                                | 29                                                                                | 23                                                                                | 65                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 49.3%                                                                             | 16.4%                                                                             | 20.7%                                                                             | 16.4%                                                                             | 46.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 40                                                                                | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                |
| End Time (s)           | 59                                                                                | 128                                                                               | 11                                                                                | 40                                                                                | 63                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 53                                                                                | 122                                                                               | 5                                                                                 | 34                                                                                | 57                                                                                | 122                                                                               |
| Local Start Time (s)   | 58                                                                                | 77                                                                                | 6                                                                                 | 29                                                                                | 58                                                                                | 81                                                                                |
| Local Yield (s)        | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 71                                                                                | 0                                                                                 | 23                                                                                | 52                                                                                | 75                                                                                | 0                                                                                 |

## Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

## Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                         |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 69 s                                                                                       | 23 s                                                                                    | 29 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                         |                                                                                          |
| 23 s                                                                                   | 65 s                                                                                       |                                                                                         |                                                                                          |

Intersection

Int Delay, s/veh 1.1

| Movement                 | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |  |  |  |  |  |
| Traffic Vol, veh/h       | 5                                                                                 | 70                                                                                | 70                                                                                | 795                                                                               | 790                                                                               | 5                                                                                 |
| Future Vol, veh/h        | 5                                                                                 | 70                                                                                | 70                                                                                | 795                                                                               | 790                                                                               | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              |
| RT Channelized           | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None                                                                              |
| Storage Length           | 0                                                                                 | 40                                                                                | 450                                                                               | -                                                                                 | -                                                                                 | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Grade, %                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 83                                                                                | 83                                                                                | 96                                                                                | 96                                                                                | 97                                                                                | 97                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |
| Mvmt Flow                | 6                                                                                 | 84                                                                                | 73                                                                                | 828                                                                               | 814                                                                               | 5                                                                                 |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1377   | 410    | 819    |
| Stage 1              | 817    | -      | -      |
| Stage 2              | 560    | -      | -      |
| Critical Hdwy        | 6.8    | 6.9    | 4.12   |
| Critical Hdwy Stg 1  | 5.8    | -      | -      |
| Critical Hdwy Stg 2  | 5.8    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.21   |
| Pot Cap-1 Maneuver   | 138    | 596    | 812    |
| Stage 1              | 400    | -      | -      |
| Stage 2              | 541    | -      | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 126    | 596    | 812    |
| Mov Cap-2 Maneuver   | 126    | -      | -      |
| Stage 1              | 364    | -      | -      |
| Stage 2              | 541    | -      | -      |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 13.5 | 0.8 | 0  |
| HCM LOS              | B    |     |    |

| Minor Lane/Major Mvmt | NBL  | NBT | EBLn1 | EBLn2 | SBT | SBR |
|-----------------------|------|-----|-------|-------|-----|-----|
| Capacity (veh/h)      | 812  | -   | 126   | 596   | -   | -   |
| HCM Lane V/C Ratio    | 0.09 | -   | 0.048 | 0.142 | -   | -   |
| HCM Control Delay (s) | 9.9  | -   | 35    | 12    | -   | -   |
| HCM Lane LOS          | A    | -   | E     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.3  | -   | 0.1   | 0.5   | -   | -   |

Intersection

| Int Delay, s/veh         | 13.1                                                                              |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Future Vol, veh/h        | 5                                                                                 | 530  | 0                                                                                 | 1    | 210  | 3                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 53   | 0                                                                                 | 10   | 10   | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 4    | 4                                                                                 |
| Mvmt Flow                | 6                                                                                 | 589  | 0                                                                                 | 1    | 233  | 3                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 480    | 64     | 0      |
| Stage 1              | 11     | -      | -      |
| Stage 2              | 469    | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 548    | 1006   | -      |
| Stage 1              | 1017   | -      | -      |
| Stage 2              | 634    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 462    | 946    | -      |
| Mov Cap-2 Maneuver   | 462    | -      | -      |
| Stage 1              | 1007   | -      | -      |
| Stage 2              | 540    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 15.3 | 0  | 7.6 |
| HCM LOS              | C    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 937   | 1580  |
| HCM Lane V/C Ratio    | -   | -        | 0.634 | 0.148 |
| HCM Control Delay (s) | -   | -        | 15.3  | 7.7   |
| HCM Lane LOS          | -   | -        | C     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 4.7   | 0.5   |

2: Hanover St/Hanover St Ext & Old Etna Rd  
HCM 6th TWSC

2035 No-Build  
Weekday AM

Intersection

| Int Delay, s/veh         | 3.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Future Vol, veh/h        | 130                                                                               | 0    | 75                                                                                | 185  | 1    | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 144                                                                               | 0    | 83                                                                                | 206  | 1    | 33                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |       |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 224    | 200    | 0      | 0 | 292   |
| Stage 1              | 189    | -      | -      | - | -     |
| Stage 2              | 35     | -      | -      | - | -     |
| Critical Hdwy        | 6.41   | 6.21   | -      | - | 4.12  |
| Critical Hdwy Stg 1  | 5.41   | -      | -      | - | -     |
| Critical Hdwy Stg 2  | 5.41   | -      | -      | - | -     |
| Follow-up Hdwy       | 3.509  | 3.309  | -      | - | 2.218 |
| Pot Cap-1 Maneuver   | 766    | 843    | -      | - | 1270  |
| Stage 1              | 846    | -      | -      | - | -     |
| Stage 2              | 990    | -      | -      | - | -     |
| Platoon blocked, %   |        |        | -      | - | -     |
| Mov Cap-1 Maneuver   | 763    | 832    | -      | - | 1266  |
| Mov Cap-2 Maneuver   | 763    | -      | -      | - | -     |
| Stage 1              | 843    | -      | -      | - | -     |
| Stage 2              | 989    | -      | -      | - | -     |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.8 | 0  | 0.3 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 763   | 1266  |
| HCM Lane V/C Ratio    | -   | -        | 0.189 | 0.001 |
| HCM Control Delay (s) | -   | -        | 10.8  | 7.8   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.7   | 0     |



### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

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Weekday AM

#### Intersection

Int Delay, s/veh 1.7

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 65                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 25   |
| Future Vol, veh/h        | 65                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 25   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 71                                                                                | 5    | 1    | 261                                                                               | 222                                                                               | 28   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 507 | 245 | 258   | 0 | - | 0 |
| Stage 1              | 244 | -   | -     | - | - | - |
| Stage 2              | 263 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 529 | 799 | 1289  | - | - | - |
| Stage 1              | 801 | -   | -     | - | - | - |
| Stage 2              | 786 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 520 | 792 | 1279  | - | - | - |
| Mov Cap-2 Maneuver   | 520 | -   | -     | - | - | - |
| Stage 1              | 794 | -   | -     | - | - | - |
| Stage 2              | 780 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 12.9 | 0 | 0 |
| HCM LOS              | B    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1279  | - | 533   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.143 | - | - |
| HCM Control Delay (s) | 7.8   | 0 | 12.9  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.5   | - | - |

Intersection

Intersection Delay, s/veh 14.1  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 50   | 95   | 210                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Future Vol, veh/h          | 3    | 75                                                                                | 100  | 85   | 60                                                                                | 50   | 95   | 210                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 3    | 83                                                                                | 111  | 94   | 67                                                                                | 56   | 106  | 233                                                                                 | 56   | 33   | 189                                                                                 | 1    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 11.7 |                                                                                   |      | 12.5 |                                                                                   |      | 17.1 |                                                                                     |      | 12.6 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | C    |                                                                                     |      | B    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 27%   | 2%    | 44%   | 15%   |
| Vol Thru, %            | 59%   | 42%   | 31%   | 85%   |
| Vol Right, %           | 14%   | 56%   | 26%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 355   | 178   | 195   | 201   |
| LT Vol                 | 95    | 3     | 85    | 30    |
| Through Vol            | 210   | 75    | 60    | 170   |
| RT Vol                 | 50    | 100   | 50    | 1     |
| Lane Flow Rate         | 394   | 198   | 217   | 223   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.611 | 0.321 | 0.362 | 0.37  |
| Departure Headway (Hd) | 5.581 | 5.838 | 6.016 | 5.96  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 643   | 609   | 594   | 599   |
| Service Time           | 3.656 | 3.93  | 4.108 | 4.049 |
| HCM Lane V/C Ratio     | 0.613 | 0.325 | 0.365 | 0.372 |
| HCM Control Delay      | 17.1  | 11.7  | 12.5  | 12.6  |
| HCM Lane LOS           | C     | B     | B     | B     |
| HCM 95th-tile Q        | 4.2   | 1.4   | 1.6   | 1.7   |

# 5: Route 120 & Old Etna Rd/Etna Rd Queues

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|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 100                                                                               | 56                                                                                | 83                                                                                | 205                                                                               | 37                                                                                | 79                                                                                | 56                                                                                 | 2783                                                                                | 372                                                                                 | 61                                                                                  | 911                                                                                 |
| v/c Ratio               | 0.87                                                                              | 0.24                                                                              | 0.31                                                                              | 0.86                                                                              | 0.29                                                                              | 0.25                                                                              | 0.54                                                                               | 1.24                                                                                | 0.31                                                                                | 0.61                                                                                | 0.41                                                                                |
| Control Delay           | 118.5                                                                             | 65.1                                                                              | 10.5                                                                              | 95.9                                                                              | 67.8                                                                              | 15.3                                                                              | 82.5                                                                               | 136.5                                                                               | 1.4                                                                                 | 89.2                                                                                | 13.3                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 118.5                                                                             | 65.1                                                                              | 10.5                                                                              | 95.9                                                                              | 67.8                                                                              | 15.3                                                                              | 82.5                                                                               | 136.5                                                                               | 1.4                                                                                 | 89.2                                                                                | 13.3                                                                                |
| Queue Length 50th (ft)  | 92                                                                                | 25                                                                                | 0                                                                                 | 96                                                                                | 33                                                                                | 7                                                                                 | 50                                                                                 | ~1661                                                                               | 7                                                                                   | 55                                                                                  | 203                                                                                 |
| Queue Length 95th (ft)  | #203                                                                              | 50                                                                                | 40                                                                                | #168                                                                              | 71                                                                                | 54                                                                                | 97                                                                                 | #1778                                                                               | 21                                                                                  | 105                                                                                 | 253                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 115                                                                               | 230                                                                               | 289                                                                               | 237                                                                               | 129                                                                               | 331                                                                               | 126                                                                                | 2250                                                                                | 1209                                                                                | 113                                                                                 | 2213                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.87                                                                              | 0.24                                                                              | 0.29                                                                              | 0.86                                                                              | 0.29                                                                              | 0.24                                                                              | 0.44                                                                               | 1.24                                                                                | 0.31                                                                                | 0.54                                                                                | 0.41                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

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|                                   |  |                                                                                    |  |                                                                                    |  |  |  |                                                                                      |  |  |                                                                                      |  |
|-----------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                                                                                                                 | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |  |   |  |   |  |  |  |   |  |  |   |  |
| Traffic Volume (vph)              | 90                                                                                | 50                                                                                                                                                                  | 75                                                                                | 195                                                                                                                                                                 | 35                                                                                | 75                                                                                | 50                                                                                  | 2505                                                                                                                                                                    | 335                                                                                 | 55                                                                                  | 745                                                                                                                                                                     | 75                                                                                  |
| Future Volume (vph)               | 90                                                                                | 50                                                                                                                                                                  | 75                                                                                | 195                                                                                                                                                                 | 35                                                                                | 75                                                                                | 50                                                                                  | 2505                                                                                                                                                                    | 335                                                                                 | 55                                                                                  | 745                                                                                                                                                                     | 75                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                                                                                                     | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 0.97                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                                                                                                    |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                                                                                                    |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3330                                                                                                                                                                | 1807                                                                              | 1536                                                                              | 1770                                                                                | 3539                                                                                                                                                                    | 1583                                                                                | 1770                                                                                | 3484                                                                                                                                                                    |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3330                                                                                                                                                                | 1807                                                                              | 1536                                                                              | 1770                                                                                | 3539                                                                                                                                                                    | 1583                                                                                | 1770                                                                                | 3484                                                                                                                                                                    |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.95                                                                                                                                                                | 0.95                                                                              | 0.95                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Adj. Flow (vph)                   | 100                                                                               | 56                                                                                                                                                                  | 83                                                                                | 205                                                                                                                                                                 | 37                                                                                | 79                                                                                | 56                                                                                  | 2783                                                                                                                                                                    | 372                                                                                 | 61                                                                                  | 828                                                                                                                                                                     | 83                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                                                                                                   | 73                                                                                | 0                                                                                                                                                                   | 0                                                                                 | 58                                                                                | 0                                                                                   | 0                                                                                                                                                                       | 89                                                                                  | 0                                                                                   | 5                                                                                                                                                                       | 0                                                                                   |
| Lane Group Flow (vph)             | 100                                                                               | 56                                                                                                                                                                  | 10                                                                                | 205                                                                                                                                                                 | 37                                                                                | 21                                                                                | 56                                                                                  | 2783                                                                                                                                                                    | 283                                                                                 | 61                                                                                  | 906                                                                                                                                                                     | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 1                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                                                                                                  | 0%                                                                                | 2%                                                                                                                                                                  | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                                                                                                      | 2%                                                                                  | 2%                                                                                  | 2%                                                                                                                                                                      | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                                                                                                  | pt+ov                                                                             | Split                                                                                                                                                               | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                                                                                                      | pt+ov                                                                               | Prot                                                                                | NA                                                                                                                                                                      |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                                                                                                   | 3 1                                                                               | 4                                                                                                                                                                   | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                                                                                                       | 6 4                                                                                 | 5                                                                                   | 2                                                                                                                                                                       |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Green, G (s)             | 9.0                                                                               | 9.0                                                                                                                                                                 | 17.2                                                                              | 10.0                                                                                                                                                                | 10.0                                                                              | 24.0                                                                              | 8.2                                                                                 | 89.0                                                                                                                                                                    | 99.0                                                                                | 8.0                                                                                 | 88.8                                                                                                                                                                    |                                                                                     |
| Effective Green, g (s)            | 9.0                                                                               | 9.0                                                                                                                                                                 | 17.2                                                                              | 10.0                                                                                                                                                                | 10.0                                                                              | 24.0                                                                              | 8.2                                                                                 | 89.0                                                                                                                                                                    | 99.0                                                                                | 8.0                                                                                 | 88.8                                                                                                                                                                    |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                                                                                                                | 0.12                                                                              | 0.07                                                                                                                                                                | 0.07                                                                              | 0.17                                                                              | 0.06                                                                                | 0.64                                                                                                                                                                    | 0.71                                                                                | 0.06                                                                                | 0.63                                                                                                                                                                    |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                 | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                                                                                                                 |                                                                                   | 2.0                                                                                                                                                                 | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                | 115                                                                               | 230                                                                                                                                                                 | 197                                                                               | 237                                                                                                                                                                 | 129                                                                               | 263                                                                               | 103                                                                                 | 2249                                                                                                                                                                    | 1119                                                                                | 101                                                                                 | 2209                                                                                                                                                                    |                                                                                     |
| v/s Ratio Prot                    | c0.06                                                                             | 0.02                                                                                                                                                                | 0.01                                                                              | c0.06                                                                                                                                                               | 0.02                                                                              | 0.01                                                                              | 0.03                                                                                | c0.79                                                                                                                                                                   | 0.18                                                                                | c0.03                                                                               | 0.26                                                                                                                                                                    |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| v/c Ratio                         | 0.87                                                                              | 0.24                                                                                                                                                                | 0.05                                                                              | 0.86                                                                                                                                                                | 0.29                                                                              | 0.08                                                                              | 0.54                                                                                | 1.24                                                                                                                                                                    | 0.25                                                                                | 0.60                                                                                | 0.41                                                                                                                                                                    |                                                                                     |
| Uniform Delay, d1                 | 64.9                                                                              | 62.3                                                                                                                                                                | 54.2                                                                              | 64.3                                                                                                                                                                | 61.6                                                                              | 48.7                                                                              | 64.1                                                                                | 25.5                                                                                                                                                                    | 7.3                                                                                 | 64.5                                                                                | 12.7                                                                                                                                                                    |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Incremental Delay, d2             | 44.4                                                                              | 0.2                                                                                                                                                                 | 0.0                                                                               | 25.6                                                                                                                                                                | 0.4                                                                               | 0.0                                                                               | 3.1                                                                                 | 110.9                                                                                                                                                                   | 0.0                                                                                 | 6.8                                                                                 | 0.6                                                                                                                                                                     |                                                                                     |
| Delay (s)                         | 109.3                                                                             | 62.5                                                                                                                                                                | 54.2                                                                              | 89.9                                                                                                                                                                | 62.1                                                                              | 48.8                                                                              | 67.2                                                                                | 136.4                                                                                                                                                                   | 7.4                                                                                 | 71.3                                                                                | 13.2                                                                                                                                                                    |                                                                                     |
| Level of Service                  | F                                                                                 | E                                                                                                                                                                   | D                                                                                 | F                                                                                                                                                                   | E                                                                                 | D                                                                                 | E                                                                                   | F                                                                                                                                                                       | A                                                                                   | E                                                                                   | B                                                                                                                                                                       |                                                                                     |
| Approach Delay (s)                |                                                                                   | 79.2                                                                                                                                                                |                                                                                   |                                                                                                                                                                     | 76.6                                                                              |                                                                                   |                                                                                     | 120.2                                                                                                                                                                   |                                                                                     |                                                                                     | 16.9                                                                                                                                                                    |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | E                                                                                 |                                                                                   |                                                                                     | F                                                                                                                                                                       |                                                                                     |                                                                                     | B                                                                                                                                                                       |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                                                                                                     | 94.0                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                                                                                                     | 1.13                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                                                                                                     | 140.0                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                                                                                                     | 93.9%                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                                                                                                     | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 No-Build  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 16                                                                                | 93                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 94                                                                                |
| Maximum Split (%)      | 11.4%                                                                             | 66.4%                                                                             | 10.7%                                                                             | 11.4%                                                                             | 10.7%                                                                             | 67.1%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 19                                                                                | 35                                                                                | 128                                                                               | 3                                                                                 | 19                                                                                | 34                                                                                |
| End Time (s)           | 35                                                                                | 128                                                                               | 3                                                                                 | 19                                                                                | 34                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 29                                                                                | 122                                                                               | 137                                                                               | 13                                                                                | 28                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 29                                                                                | 122                                                                               | 137                                                                               | 13                                                                                | 28                                                                                | 122                                                                               |
| Local Start Time (s)   | 37                                                                                | 53                                                                                | 6                                                                                 | 21                                                                                | 37                                                                                | 52                                                                                |
| Local Yield (s)        | 47                                                                                | 0                                                                                 | 15                                                                                | 31                                                                                | 46                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 47                                                                                | 0                                                                                 | 15                                                                                | 31                                                                                | 46                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 16 s                                                                                   | 93 s                                                                                       | 15 s                                                                                     | 16 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 94 s                                                                                       |                                                                                          |                                                                                          |



Intersection

Int Delay, s/veh 88.2

| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↗    | ↘    | ↑↑↑  | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 250  | 540  | 3230 | 1335 | 85   |
| Future Vol, veh/h        | 0    | 250  | 540  | 3230 | 1335 | 85   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 93   | 93   |
| Heavy Vehicles, %        | 1    | 1    | 2    | 2    | 4    | 4    |
| Mvmt Flow                | 0    | 278  | 600  | 3589 | 1435 | 91   |

| Major/Minor          | Minor2 | Major1    | Major2 |
|----------------------|--------|-----------|--------|
| Conflicting Flow All | -      | 763 1526  | 0 - 0  |
| Stage 1              | -      | -         | - - -  |
| Stage 2              | -      | -         | - - -  |
| Critical Hdwy        | -      | 7.12 5.34 | - - -  |
| Critical Hdwy Stg 1  | -      | -         | - - -  |
| Critical Hdwy Stg 2  | -      | -         | - - -  |
| Follow-up Hdwy       | -      | 3.91 3.12 | - - -  |
| Pot Cap-1 Maneuver   | 0      | 299 ~ 216 | - - -  |
| Stage 1              | 0      | -         | - - -  |
| Stage 2              | 0      | -         | - - -  |
| Platoon blocked, %   |        |           | - - -  |
| Mov Cap-1 Maneuver   | -      | 299 ~ 216 | - - -  |
| Mov Cap-2 Maneuver   | -      | -         | - - -  |
| Stage 1              | -      | -         | - - -  |
| Stage 2              | -      | -         | - - -  |

| Approach             | EB   | NB    | SB |
|----------------------|------|-------|----|
| HCM Control Delay, s | 73.8 | 121.3 | 0  |
| HCM LOS              | F    |       |    |

| Minor Lane/Major Mvmt | NBL      | NBT | EBLn1 | SBT | SBR |
|-----------------------|----------|-----|-------|-----|-----|
| Capacity (veh/h)      | ~ 216    | -   | 299   | -   | -   |
| HCM Lane V/C Ratio    | 2.778    | -   | 0.929 | -   | -   |
| HCM Control Delay (s) | \$ 846.9 | -   | 73.8  | -   | -   |
| HCM Lane LOS          | F        | -   | F     | -   | -   |
| HCM 95th %tile Q(veh) | 52.3     | -   | 9     | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Intersection

Int Delay, s/veh 7.4

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 1                                                                                 | 85   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Future Vol, veh/h        | 1                                                                                 | 85   | 5                                                                                 | 5    | 95   | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 1                                                                                 | 94   | 6                                                                                 | 6    | 106  | 6                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 227    | 12     | 0      |
| Stage 1              | 9      | -      | -      |
| Stage 2              | 218    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 761    | 1069   | -      |
| Stage 1              | 1014   | -      | -      |
| Stage 2              | 818    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 711    | 1066   | -      |
| Mov Cap-2 Maneuver   | 711    | -      | -      |
| Stage 1              | 1014   | -      | -      |
| Stage 2              | 764    | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.7 | 0  | 7  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL  | SBT   |
|-----------------------|-----|----------|------|-------|
| Capacity (veh/h)      | -   | -        | 1060 | 1620  |
| HCM Lane V/C Ratio    | -   | -        | 0.09 | 0.065 |
| HCM Control Delay (s) | -   | -        | 8.7  | 7.4   |
| HCM Lane LOS          | -   | -        | A    | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.3  | 0.2   |

Intersection

| Int Delay, s/veh         | 2                                                                                 |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 30                                                                                | 3    | 20                                                                                | 65   | 3    | 45                                                                                |
| Future Vol, veh/h        | 30                                                                                | 3    | 20                                                                                | 65   | 3    | 45                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 33                                                                                | 3    | 22                                                                                | 72   | 3    | 50                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 114    | 58     | 0      |
| Stage 1              | 58     | -      | -      |
| Stage 2              | 56     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 887    | 1014   | -      |
| Stage 1              | 970    | -      | -      |
| Stage 2              | 972    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 885    | 1014   | -      |
| Mov Cap-2 Maneuver   | 885    | -      | -      |
| Stage 1              | 970    | -      | -      |
| Stage 2              | 970    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.2 | 0  | 0.5 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 895   | 1513  |
| HCM Lane V/C Ratio    | -   | -        | 0.041 | 0.002 |
| HCM Control Delay (s) | -   | -        | 9.2   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2035 No-Build  
Weekday PM

#### Intersection

Int Delay, s/veh 0.2

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 40   |
| Future Vol, veh/h        | 10                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 40   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 97   | 97                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 11                                                                                | 1    | 1    | 201                                                                               | 433                                                                               | 44   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 659 | 456 | 478   | 0 | - | 0 |
| Stage 1              | 456 | -   | -     | - | - | - |
| Stage 2              | 203 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.16  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.254 | - | - | - |
| Pot Cap-1 Maneuver   | 432 | 609 | 1064  | - | - | - |
| Stage 1              | 643 | -   | -     | - | - | - |
| Stage 2              | 836 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 431 | 608 | 1063  | - | - | - |
| Mov Cap-2 Maneuver   | 431 | -   | -     | - | - | - |
| Stage 1              | 642 | -   | -     | - | - | - |
| Stage 2              | 835 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 13.4 | 0 | 0 |
| HCM LOS              | B    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1063  | - | 443   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.028 | - | - |
| HCM Control Delay (s) | 8.4   | 0 | 13.4  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.1   | - | - |

Intersection

Intersection Delay, s/veh 13.1  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 25                                                                                | 45   | 125  | 10                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Future Vol, veh/h          | 3    | 25                                                                                | 45   | 125  | 10                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.95 | 0.95                                                                              | 0.95 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 3    | 28                                                                                | 50   | 132  | 11                                                                                | 37   | 28   | 172                                                                                 | 78   | 22   | 389                                                                                 | 6    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 9.6  |                                                                                   |      | 11.4 |                                                                                   |      | 11.7 |                                                                                     |      | 15.5 |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | B    |                                                                                   |      | B    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 10%   | 4%    | 74%   | 5%    |
| Vol Thru, %            | 62%   | 34%   | 6%    | 93%   |
| Vol Right, %           | 28%   | 62%   | 21%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 250   | 73    | 170   | 375   |
| LT Vol                 | 25    | 3     | 125   | 20    |
| Through Vol            | 155   | 25    | 10    | 350   |
| RT Vol                 | 70    | 45    | 35    | 5     |
| Lane Flow Rate         | 278   | 81    | 179   | 417   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.401 | 0.128 | 0.293 | 0.595 |
| Departure Headway (Hd) | 5.203 | 5.7   | 5.89  | 5.14  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 692   | 626   | 608   | 700   |
| Service Time           | 3.244 | 3.757 | 3.938 | 3.176 |
| HCM Lane V/C Ratio     | 0.402 | 0.129 | 0.294 | 0.596 |
| HCM Control Delay      | 11.7  | 9.6   | 11.4  | 15.5  |
| HCM Lane LOS           | B     | A     | B     | C     |
| HCM 95th-tile Q        | 1.9   | 0.4   | 1.2   | 4     |



# 5: Route 120 & Old Etna Rd/Etna Rd Queues

2035 No-Build  
Weekday PM

|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 61                                                                                | 33                                                                                | 72                                                                                | 317                                                                               | 11                                                                                | 67                                                                                | 16                                                                                 | 904                                                                                 | 149                                                                                 | 67                                                                                  | 2226                                                                                |
| v/c Ratio               | 0.57                                                                              | 0.15                                                                              | 0.32                                                                              | 0.90                                                                              | 0.06                                                                              | 0.17                                                                              | 0.21                                                                               | 0.42                                                                                | 0.13                                                                                | 0.59                                                                                | 0.98                                                                                |
| Control Delay           | 84.2                                                                              | 63.1                                                                              | 12.4                                                                              | 88.8                                                                              | 58.7                                                                              | 10.1                                                                              | 70.7                                                                               | 16.0                                                                                | 0.8                                                                                 | 83.4                                                                                | 40.0                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 84.2                                                                              | 63.1                                                                              | 12.4                                                                              | 88.8                                                                              | 58.7                                                                              | 10.1                                                                              | 70.7                                                                               | 16.0                                                                                | 0.8                                                                                 | 83.4                                                                                | 40.0                                                                                |
| Queue Length 50th (ft)  | 55                                                                                | 15                                                                                | 1                                                                                 | 150                                                                               | 9                                                                                 | 0                                                                                 | 14                                                                                 | 223                                                                                 | 0                                                                                   | 60                                                                                  | ~1017                                                                               |
| Queue Length 95th (ft)  | 104                                                                               | 33                                                                                | 39                                                                                | #254                                                                              | 30                                                                                | 39                                                                                | 40                                                                                 | 278                                                                                 | 10                                                                                  | 112                                                                                 | #1267                                                                               |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 128                                                                               | 256                                                                               | 278                                                                               | 354                                                                               | 192                                                                               | 408                                                                               | 114                                                                                | 2145                                                                                | 1170                                                                                | 140                                                                                 | 2271                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.48                                                                              | 0.13                                                                              | 0.26                                                                              | 0.90                                                                              | 0.06                                                                              | 0.16                                                                              | 0.14                                                                               | 0.42                                                                                | 0.13                                                                                | 0.48                                                                                | 0.98                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

5: Route 120 & Old Etna Rd/Etna Rd  
HCM Signalized Intersection Capacity Analysis

2035 No-Build  
Weekday PM

|                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations               |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph)              | 55                                                                                | 30                                                                                | 65                                                                                | 285                                                                               | 10                                                                                | 60                                                                                | 15                                                                                  | 850                                                                                 | 140                                                                                 | 65                                                                                  | 2115                                                                                | 45                                                                                  |
| Future Volume (vph)               | 55                                                                                | 30                                                                                | 65                                                                                | 285                                                                               | 10                                                                                | 60                                                                                | 15                                                                                  | 850                                                                                 | 140                                                                                 | 65                                                                                  | 2115                                                                                | 45                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 3592                                                                              | 1607                                                                              | 3397                                                                              | 1843                                                                              | 1567                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 3592                                                                              | 1607                                                                              | 3397                                                                              | 1843                                                                              | 1567                                                                              | 1787                                                                                | 3574                                                                                | 1599                                                                                | 1787                                                                                | 3562                                                                                |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Adj. Flow (vph)                   | 61                                                                                | 33                                                                                | 72                                                                                | 317                                                                               | 11                                                                                | 67                                                                                | 16                                                                                  | 904                                                                                 | 149                                                                                 | 67                                                                                  | 2180                                                                                | 46                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 63                                                                                | 0                                                                                 | 0                                                                                 | 53                                                                                | 0                                                                                   | 0                                                                                   | 44                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Lane Group Flow (vph)             | 61                                                                                | 33                                                                                | 9                                                                                 | 317                                                                               | 11                                                                                | 14                                                                                | 16                                                                                  | 904                                                                                 | 105                                                                                 | 67                                                                                  | 2225                                                                                | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | pt+ov                                                                             | Split                                                                             | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                  | pt+ov                                                                               | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                 | 3 1                                                                               | 4                                                                                 | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                   | 6 4                                                                                 | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Green, G (s)             | 8.4                                                                               | 8.4                                                                               | 13.4                                                                              | 14.6                                                                              | 14.6                                                                              | 29.6                                                                              | 5.0                                                                                 | 84.0                                                                                | 98.6                                                                                | 9.0                                                                                 | 88.0                                                                                |                                                                                     |
| Effective Green, g (s)            | 8.4                                                                               | 8.4                                                                               | 13.4                                                                              | 14.6                                                                              | 14.6                                                                              | 29.6                                                                              | 5.0                                                                                 | 84.0                                                                                | 98.6                                                                                | 9.0                                                                                 | 88.0                                                                                |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                              | 0.10                                                                              | 0.10                                                                              | 0.10                                                                              | 0.21                                                                              | 0.04                                                                                | 0.60                                                                                | 0.70                                                                                | 0.06                                                                                | 0.63                                                                                |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                 |                                                                                     | 2.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Lane Grp Cap (vph)                | 107                                                                               | 215                                                                               | 153                                                                               | 354                                                                               | 192                                                                               | 331                                                                               | 63                                                                                  | 2144                                                                                | 1126                                                                                | 114                                                                                 | 2238                                                                                |                                                                                     |
| v/s Ratio Prot                    | c0.03                                                                             | 0.01                                                                              | 0.01                                                                              | c0.09                                                                             | 0.01                                                                              | 0.01                                                                              | 0.01                                                                                | 0.25                                                                                | 0.07                                                                                | c0.04                                                                               | c0.62                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| v/c Ratio                         | 0.57                                                                              | 0.15                                                                              | 0.06                                                                              | 0.90                                                                              | 0.06                                                                              | 0.04                                                                              | 0.25                                                                                | 0.42                                                                                | 0.09                                                                                | 0.59                                                                                | 0.99                                                                                |                                                                                     |
| Uniform Delay, d1                 | 64.0                                                                              | 62.4                                                                              | 57.6                                                                              | 61.9                                                                              | 56.5                                                                              | 43.9                                                                              | 65.7                                                                                | 15.0                                                                                | 6.6                                                                                 | 63.7                                                                                | 25.7                                                                                |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |                                                                                     |
| Incremental Delay, d2             | 4.5                                                                               | 0.1                                                                               | 0.1                                                                               | 23.3                                                                              | 0.0                                                                               | 0.0                                                                               | 0.8                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 4.9                                                                                 | 17.7                                                                                |                                                                                     |
| Delay (s)                         | 68.5                                                                              | 62.5                                                                              | 57.6                                                                              | 85.3                                                                              | 56.5                                                                              | 43.9                                                                              | 66.5                                                                                | 15.6                                                                                | 6.6                                                                                 | 68.6                                                                                | 43.4                                                                                |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 | F                                                                                 | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   |                                                                                     |
| Approach Delay (s)                |                                                                                   | 62.6                                                                              |                                                                                   |                                                                                   | 77.5                                                                              |                                                                                   |                                                                                     | 15.1                                                                                |                                                                                     |                                                                                     | 44.2                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 40.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.95                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 140.0                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 87.2%                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 No-Build  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 90                                                                                | 16                                                                                | 19                                                                                | 17                                                                                | 88                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 64.3%                                                                             | 11.4%                                                                             | 13.6%                                                                             | 12.1%                                                                             | 62.9%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 23                                                                                | 38                                                                                | 128                                                                               | 4                                                                                 | 23                                                                                | 40                                                                                |
| End Time (s)           | 38                                                                                | 128                                                                               | 4                                                                                 | 23                                                                                | 40                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 32                                                                                | 122                                                                               | 138                                                                               | 17                                                                                | 34                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 32                                                                                | 122                                                                               | 138                                                                               | 17                                                                                | 34                                                                                | 122                                                                               |
| Local Start Time (s)   | 41                                                                                | 56                                                                                | 6                                                                                 | 22                                                                                | 41                                                                                | 58                                                                                |
| Local Yield (s)        | 50                                                                                | 0                                                                                 | 16                                                                                | 35                                                                                | 52                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 50                                                                                | 0                                                                                 | 16                                                                                | 35                                                                                | 52                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 140  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 90 s                                                                                       | 16 s                                                                                     | 19 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 88 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 67.5

| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↗    | ↖    | ↑↑↑  | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 165  | 100  | 1265 | 3125 | 15   |
| Future Vol, veh/h        | 0    | 165  | 100  | 1265 | 3125 | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 98   | 98   | 93   | 93   |
| Heavy Vehicles, %        | 0    | 0    | 2    | 2    | 1    | 1    |
| Mvmt Flow                | 0    | 183  | 102  | 1291 | 3360 | 16   |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | - 1689 | 3377   | 0 - 0  |
| Stage 1              | -      | -      | - - -  |
| Stage 2              | -      | -      | - - -  |
| Critical Hdwy        | - 7.1  | 5.34   | - - -  |
| Critical Hdwy Stg 1  | -      | -      | - - -  |
| Critical Hdwy Stg 2  | -      | -      | - - -  |
| Follow-up Hdwy       | - 3.9  | 3.12   | - - -  |
| Pot Cap-1 Maneuver   | 0 ~ 72 | ~ 24   | - - -  |
| Stage 1              | 0      | -      | - - -  |
| Stage 2              | 0      | -      | - - -  |
| Platoon blocked, %   |        |        | - - -  |
| Mov Cap-1 Maneuver   | - ~ 72 | ~ 24   | - - -  |
| Mov Cap-2 Maneuver   | -      | -      | - - -  |
| Stage 1              | -      | -      | - - -  |
| Stage 2              | -      | -      | - - -  |

| Approach             | EB    | NB    | SB |
|----------------------|-------|-------|----|
| HCM Control Delay, s | 825.2 | 131.4 | 0  |
| HCM LOS              | F     |       |    |

| Minor Lane/Major Mvmt | NBL       | NBT | EBLn1    | SBT | SBR |
|-----------------------|-----------|-----|----------|-----|-----|
| Capacity (veh/h)      | ~ 24      | -   | 72       | -   | -   |
| HCM Lane V/C Ratio    | 4.252     | -   | 2.546    | -   | -   |
| HCM Control Delay (s) | \$ 1793.4 | -   | \$ 825.2 | -   | -   |
| HCM Lane LOS          | F         | -   | F        | -   | -   |
| HCM 95th %tile Q(veh) | 12.8      | -   | 17.8     | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Intersection

| Int Delay, s/veh         | 7.8                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 35   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 35   | 0                                                                                 | 1    | 20   | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 9    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 39   | 0                                                                                 | 1    | 22   | 1                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 46     | 10     | 0      |
| Stage 1              | 1      | -      | -      |
| Stage 2              | 45     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 969    | 1077   | -      |
| Stage 1              | 1028   | -      | -      |
| Stage 2              | 983    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 956    | 1068   | -      |
| Mov Cap-2 Maneuver   | 956    | -      | -      |
| Stage 1              | 1028   | -      | -      |
| Stage 2              | 970    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.5 | 0  | 6.9 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1068  | 1635  |
| HCM Lane V/C Ratio    | -   | -        | 0.036 | 0.014 |
| HCM Control Delay (s) | -   | -        | 8.5   | 7.2   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0     |



Intersection

| Int Delay, s/veh         | 0.9                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 5                                                                                 | 0    | 15                                                                                | 15   | 0    | 15                                                                                |
| Future Vol, veh/h        | 5                                                                                 | 0    | 15                                                                                | 15   | 0    | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 6                                                                                 | 0    | 17                                                                                | 17   | 0    | 17                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 43     | 28     | 0      |
| Stage 1              | 26     | -      | -      |
| Stage 2              | 17     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 973    | 1053   | -      |
| Stage 1              | 1002   | -      | -      |
| Stage 2              | 1011   | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 973    | 1051   | -      |
| Mov Cap-2 Maneuver   | 973    | -      | -      |
| Stage 1              | 1002   | -      | -      |
| Stage 2              | 1011   | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.7 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 973   | 1591 |
| HCM Lane V/C Ratio    | -   | -        | 0.006 | -    |
| HCM Control Delay (s) | -   | -        | 8.7   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |

### 3: Heater Rd/Mt Support Rd & Hanover St Ext HCM 6th TWSC

2035 No-Build  
Sat MIDDAY

#### Intersection

| Int Delay, s/veh         | 0.6                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Future Vol, veh/h        | 10                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 15   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 11                                                                                | 0    | 0    | 67                                                                                | 89                                                                                | 17   |

| Major/Minor          | Minor2 | Major1 |      | Major2 |   |
|----------------------|--------|--------|------|--------|---|
| Conflicting Flow All | 168    | 101    | 106  | 0      | 0 |
| Stage 1              | 98     | -      | -    | -      | - |
| Stage 2              | 70     | -      | -    | -      | - |
| Critical Hdwy        | 6.4    | 6.2    | 4.1  | -      | - |
| Critical Hdwy Stg 1  | 5.4    | -      | -    | -      | - |
| Critical Hdwy Stg 2  | 5.4    | -      | -    | -      | - |
| Follow-up Hdwy       | 3.5    | 3.3    | 2.2  | -      | - |
| Pot Cap-1 Maneuver   | 827    | 960    | 1498 | -      | - |
| Stage 1              | 931    | -      | -    | -      | - |
| Stage 2              | 958    | -      | -    | -      | - |
| Platoon blocked, %   |        |        |      | -      | - |
| Mov Cap-1 Maneuver   | 827    | 957    | 1498 | -      | - |
| Mov Cap-2 Maneuver   | 827    | -      | -    | -      | - |
| Stage 1              | 931    | -      | -    | -      | - |
| Stage 2              | 958    | -      | -    | -      | - |

| Approach             | EB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 9.4 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBL  | NBT | EBLn1 | SBT | SBR |
|-----------------------|------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1498 | -   | 827   | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | 0.013 | -   | -   |
| HCM Control Delay (s) | 0    | -   | 9.4   | -   | -   |
| HCM Lane LOS          | A    | -   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | 0     | -   | -   |

Intersection

Intersection Delay, s/veh 7.6  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 15                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 15                                                                                | 5    | 60   | 2                                                                                 | 10   | 2    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Peak Hour Factor    | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 17                                                                                | 6    | 67   | 2                                                                                 | 11   | 2    | 56                                                                                  | 33   | 2    | 78                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 7.3 | 7.8 | 7.4 | 7.7 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 2%    | 0%    | 83%   | 3%    |
| Vol Thru, %            | 61%   | 75%   | 3%    | 97%   |
| Vol Right, %           | 37%   | 25%   | 14%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 82    | 20    | 72    | 72    |
| LT Vol                 | 2     | 0     | 60    | 2     |
| Through Vol            | 50    | 15    | 2     | 70    |
| RT Vol                 | 30    | 5     | 10    | 0     |
| Lane Flow Rate         | 91    | 22    | 80    | 80    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.099 | 0.025 | 0.095 | 0.092 |
| Departure Headway (Hd) | 3.924 | 4.108 | 4.296 | 4.154 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 901   | 856   | 824   | 853   |
| Service Time           | 2     | 2.205 | 2.375 | 2.227 |
| HCM Lane V/C Ratio     | 0.101 | 0.026 | 0.097 | 0.094 |
| HCM Control Delay      | 7.4   | 7.3   | 7.8   | 7.7   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.3   | 0.1   | 0.3   | 0.3   |

5: Route 120 & Old Etna Rd/Etna Rd  
Queues

2035 No-Build  
Sat Midday

|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 22                                                                                | 6                                                                                 | 17                                                                                | 111                                                                               | 6                                                                                 | 28                                                                                | 11                                                                                 | 644                                                                                 | 100                                                                                 | 36                                                                                  | 578                                                                                 |
| v/c Ratio               | 0.27                                                                              | 0.04                                                                              | 0.09                                                                              | 0.52                                                                              | 0.05                                                                              | 0.09                                                                              | 0.15                                                                               | 0.25                                                                                | 0.08                                                                                | 0.38                                                                                | 0.22                                                                                |
| Control Delay           | 72.2                                                                              | 63.2                                                                              | 0.8                                                                               | 71.5                                                                              | 60.8                                                                              | 0.6                                                                               | 69.0                                                                               | 9.0                                                                                 | 0.7                                                                                 | 75.0                                                                                | 7.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 72.2                                                                              | 63.2                                                                              | 0.8                                                                               | 71.5                                                                              | 60.8                                                                              | 0.6                                                                               | 69.0                                                                               | 9.0                                                                                 | 0.7                                                                                 | 75.0                                                                                | 7.6                                                                                 |
| Queue Length 50th (ft)  | 20                                                                                | 2                                                                                 | 0                                                                                 | 51                                                                                | 5                                                                                 | 0                                                                                 | 10                                                                                 | 115                                                                                 | 0                                                                                   | 32                                                                                  | 96                                                                                  |
| Queue Length 95th (ft)  | 49                                                                                | 10                                                                                | 0                                                                                 | 82                                                                                | 20                                                                                | 0                                                                                 | 32                                                                                 | 174                                                                                 | 8                                                                                   | 69                                                                                  | 144                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 203                                                                               | 406                                                                               | 372                                                                               | 471                                                                               | 255                                                                               | 402                                                                               | 167                                                                                | 2571                                                                                | 1405                                                                                | 216                                                                                 | 2637                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.11                                                                              | 0.01                                                                              | 0.05                                                                              | 0.24                                                                              | 0.02                                                                              | 0.07                                                                              | 0.07                                                                               | 0.25                                                                                | 0.07                                                                                | 0.17                                                                                | 0.22                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# 5: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 No-Build  
Sat MIDDAY

|                                   |  |                                                                                       |  |                                                                                       |  |  |  |                                                                                         |  |  |                                                                                         |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                                                                                                                    | EBR                                                                               | WBL                                                                                                                                                                    | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations               |  | <br> |  | <br> |  |  |  | <br> |  |  | <br> |  |
| Traffic Volume (vph)              | 20                                                                                | 5                                                                                                                                                                      | 15                                                                                | 100                                                                                                                                                                    | 5                                                                                 | 25                                                                                | 10                                                                                  | 580                                                                                                                                                                        | 90                                                                                  | 35                                                                                  | 545                                                                                                                                                                        | 10                                                                                  |
| Future Volume (vph)               | 20                                                                                | 5                                                                                                                                                                      | 15                                                                                | 100                                                                                                                                                                    | 5                                                                                 | 25                                                                                | 10                                                                                  | 580                                                                                                                                                                        | 90                                                                                  | 35                                                                                  | 545                                                                                                                                                                        | 10                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                                                                                                                   | 1900                                                                              | 1900                                                                                                                                                                   | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                                                                                                     |                                                                                   |                                                                                                                                                                        | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                                                                                                         |                                                                                     |                                                                                     | 0%                                                                                                                                                                         |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                                                                                                                    | 6.0                                                                               | 6.0                                                                                                                                                                    | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                                                                                                        | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                                                                                                        |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                                                                                                                   | 1.00                                                                              | 0.97                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                                                                                                       |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                                                                                                                   | 0.85                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 0.95                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 3556                                                                                                                                                                   | 1591                                                                              | 3298                                                                                                                                                                   | 1789                                                                              | 1521                                                                              | 1805                                                                                | 3610                                                                                                                                                                       | 1615                                                                                | 1787                                                                                | 3564                                                                                                                                                                       |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 0.95                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 3556                                                                                                                                                                   | 1591                                                                              | 3298                                                                                                                                                                   | 1789                                                                              | 1521                                                                              | 1805                                                                                | 3610                                                                                                                                                                       | 1615                                                                                | 1787                                                                                | 3564                                                                                                                                                                       |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                                                                                                                   | 0.90                                                                              | 0.90                                                                                                                                                                   | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                       | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                                                                                                       | 0.96                                                                                |
| Adj. Flow (vph)                   | 22                                                                                | 6                                                                                                                                                                      | 17                                                                                | 111                                                                                                                                                                    | 6                                                                                 | 28                                                                                | 11                                                                                  | 644                                                                                                                                                                        | 100                                                                                 | 36                                                                                  | 568                                                                                                                                                                        | 10                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                                                                                                      | 16                                                                                | 0                                                                                                                                                                      | 0                                                                                 | 24                                                                                | 0                                                                                   | 0                                                                                                                                                                          | 25                                                                                  | 0                                                                                   | 1                                                                                                                                                                          | 0                                                                                   |
| Lane Group Flow (vph)             | 22                                                                                | 6                                                                                                                                                                      | 1                                                                                 | 111                                                                                                                                                                    | 6                                                                                 | 4                                                                                 | 11                                                                                  | 644                                                                                                                                                                        | 75                                                                                  | 36                                                                                  | 577                                                                                                                                                                        | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   | 1                                                                                   |                                                                                                                                                                            | 1                                                                                   | 1                                                                                   |                                                                                                                                                                            | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                                                                                                     | 1%                                                                                | 3%                                                                                                                                                                     | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                                                                                                         | 0%                                                                                  | 1%                                                                                  | 1%                                                                                                                                                                         | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                                                                                                     | pt+ov                                                                             | Split                                                                                                                                                                  | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                                                                                                         | pt+ov                                                                               | Prot                                                                                | NA                                                                                                                                                                         |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                                                                                                      | 3 1                                                                               | 4                                                                                                                                                                      | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                                                                                                          | 6 4                                                                                 | 5                                                                                   | 2                                                                                                                                                                          |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Actuated Green, G (s)             | 4.4                                                                               | 4.4                                                                                                                                                                    | 8.1                                                                               | 9.1                                                                                                                                                                    | 9.1                                                                               | 21.5                                                                              | 3.7                                                                                 | 96.1                                                                                                                                                                       | 105.2                                                                               | 6.4                                                                                 | 98.8                                                                                                                                                                       |                                                                                     |
| Effective Green, g (s)            | 4.4                                                                               | 4.4                                                                                                                                                                    | 8.1                                                                               | 9.1                                                                                                                                                                    | 9.1                                                                               | 21.5                                                                              | 3.7                                                                                 | 96.1                                                                                                                                                                       | 105.2                                                                               | 6.4                                                                                 | 98.8                                                                                                                                                                       |                                                                                     |
| Actuated g/C Ratio                | 0.03                                                                              | 0.03                                                                                                                                                                   | 0.06                                                                              | 0.06                                                                                                                                                                   | 0.06                                                                              | 0.15                                                                              | 0.03                                                                                | 0.69                                                                                                                                                                       | 0.75                                                                                | 0.05                                                                                | 0.71                                                                                                                                                                       |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                                                                                                                    |                                                                                   | 6.0                                                                                                                                                                    | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                                                                                                        |                                                                                     | 6.0                                                                                 | 6.0                                                                                                                                                                        |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                                                                                                                    |                                                                                   | 2.0                                                                                                                                                                    | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                                                                                                        |                                                                                     | 2.0                                                                                 | 3.0                                                                                                                                                                        |                                                                                     |
| Lane Grp Cap (vph)                | 55                                                                                | 111                                                                                                                                                                    | 92                                                                                | 214                                                                                                                                                                    | 116                                                                               | 233                                                                               | 47                                                                                  | 2478                                                                                                                                                                       | 1213                                                                                | 81                                                                                  | 2515                                                                                                                                                                       |                                                                                     |
| v/s Ratio Prot                    | c0.01                                                                             | 0.00                                                                                                                                                                   | 0.00                                                                              | c0.03                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.01                                                                                | c0.18                                                                                                                                                                      | 0.05                                                                                | c0.02                                                                               | c0.16                                                                                                                                                                      |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| v/c Ratio                         | 0.40                                                                              | 0.05                                                                                                                                                                   | 0.01                                                                              | 0.52                                                                                                                                                                   | 0.05                                                                              | 0.02                                                                              | 0.23                                                                                | 0.26                                                                                                                                                                       | 0.06                                                                                | 0.44                                                                                | 0.23                                                                                                                                                                       |                                                                                     |
| Uniform Delay, d1                 | 66.5                                                                              | 65.8                                                                                                                                                                   | 62.2                                                                              | 63.3                                                                                                                                                                   | 61.4                                                                              | 50.3                                                                              | 66.8                                                                                | 8.4                                                                                                                                                                        | 4.5                                                                                 | 65.1                                                                                | 7.2                                                                                                                                                                        |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       |                                                                                     |
| Incremental Delay, d2             | 1.7                                                                               | 0.1                                                                                                                                                                    | 0.0                                                                               | 0.9                                                                                                                                                                    | 0.1                                                                               | 0.0                                                                               | 0.9                                                                                 | 0.3                                                                                                                                                                        | 0.0                                                                                 | 1.4                                                                                 | 0.2                                                                                                                                                                        |                                                                                     |
| Delay (s)                         | 68.2                                                                              | 65.9                                                                                                                                                                   | 62.2                                                                              | 64.2                                                                                                                                                                   | 61.5                                                                              | 50.3                                                                              | 67.7                                                                                | 8.6                                                                                                                                                                        | 4.5                                                                                 | 66.5                                                                                | 7.4                                                                                                                                                                        |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                                                                                                      | E                                                                                 | E                                                                                                                                                                      | E                                                                                 | D                                                                                 | E                                                                                   | A                                                                                                                                                                          | A                                                                                   | E                                                                                   | A                                                                                                                                                                          |                                                                                     |
| Approach Delay (s)                |                                                                                   | 65.6                                                                                                                                                                   |                                                                                   |                                                                                                                                                                        | 61.4                                                                              |                                                                                   |                                                                                     | 9.0                                                                                                                                                                        |                                                                                     |                                                                                     | 10.9                                                                                                                                                                       |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                                                                                                      |                                                                                   |                                                                                                                                                                        | E                                                                                 |                                                                                   |                                                                                     | A                                                                                                                                                                          |                                                                                     |                                                                                     | B                                                                                                                                                                          |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                                                                                                        | 16.2                                                                              |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                                                                                                        | 0.30                                                                              |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                                                                                                        | 140.0                                                                             |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                                                                                                        | 44.7%                                                                             |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                                                                                                        | 15                                                                                |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |



5: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 No-Build  
Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 73                                                                                | 22                                                                                | 26                                                                                | 23                                                                                | 69                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 52.1%                                                                             | 15.7%                                                                             | 18.6%                                                                             | 16.4%                                                                             | 49.3%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 36                                                                                | 55                                                                                | 128                                                                               | 10                                                                                | 36                                                                                | 59                                                                                |
| End Time (s)           | 55                                                                                | 128                                                                               | 10                                                                                | 36                                                                                | 59                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 49                                                                                | 122                                                                               | 4                                                                                 | 30                                                                                | 53                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 49                                                                                | 122                                                                               | 4                                                                                 | 30                                                                                | 53                                                                                | 122                                                                               |
| Local Start Time (s)   | 54                                                                                | 73                                                                                | 6                                                                                 | 28                                                                                | 54                                                                                | 77                                                                                |
| Local Yield (s)        | 67                                                                                | 0                                                                                 | 22                                                                                | 48                                                                                | 71                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 67                                                                                | 0                                                                                 | 22                                                                                | 48                                                                                | 71                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 5: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 73 s                                                                                       | 22 s                                                                                     | 26 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 23 s                                                                                   | 69 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↗    | ↘    | ↑↑↑  | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 35   | 35   | 875  | 870  | 5    |
| Future Vol, veh/h        | 0    | 35   | 35   | 875  | 870  | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 96   | 96   | 97   | 97   |
| Heavy Vehicles, %        | 0    | 0    | 1    | 1    | 1    | 1    |
| Mvmt Flow                | 0    | 39   | 36   | 911  | 897  | 5    |

Major/Minor Minor2 Major1 Major2

|                      |   |     |      |   |   |   |
|----------------------|---|-----|------|---|---|---|
| Conflicting Flow All | - | 451 | 902  | 0 | - | 0 |
| Stage 1              | - | -   | -    | - | - | - |
| Stage 2              | - | -   | -    | - | - | - |
| Critical Hdwy        | - | 7.1 | 5.32 | - | - | - |
| Critical Hdwy Stg 1  | - | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | - | -   | -    | - | - | - |
| Follow-up Hdwy       | - | 3.9 | 3.11 | - | - | - |
| Pot Cap-1 Maneuver   | 0 | 479 | 439  | - | - | - |
| Stage 1              | 0 | -   | -    | - | - | - |
| Stage 2              | 0 | -   | -    | - | - | - |
| Platoon blocked, %   |   |     |      | - | - | - |
| Mov Cap-1 Maneuver   | - | 479 | 439  | - | - | - |
| Mov Cap-2 Maneuver   | - | -   | -    | - | - | - |
| Stage 1              | - | -   | -    | - | - | - |
| Stage 2              | - | -   | -    | - | - | - |

Approach EB NB SB

|                      |      |     |   |
|----------------------|------|-----|---|
| HCM Control Delay, s | 13.2 | 0.5 | 0 |
| HCM LOS              | B    |     |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 439   | - | 479   | - | - |
| HCM Lane V/C Ratio    | 0.083 | - | 0.081 | - | - |
| HCM Control Delay (s) | 13.9  | - | 13.2  | - | - |
| HCM Lane LOS          | B     | - | B     | - | - |
| HCM 95th %tile Q(veh) | 0.3   | - | 0.3   | - | - |

Intersection

Int Delay, s/veh 21.5

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

|                          |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↔    |      |      | ↔    |      |      | ↔    |      |      | ↔    |      |
| Traffic Vol, veh/h       | 45   | 60   | 0    | 5    | 20   | 530  | 0    | 0    | 1    | 210  | 3    | 10   |
| Future Vol, veh/h        | 45   | 60   | 0    | 5    | 20   | 530  | 0    | 0    | 1    | 210  | 3    | 10   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 53   | 0    | 0    | 10   | 10   | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 4    | 4    | 4    |
| Mvmt Flow                | 50   | 67   | 0    | 6    | 22   | 589  | 0    | 0    | 1    | 233  | 3    | 11   |

| Major/Minor          | Minor2 |       | Minor1 |      | Major1 |      | Major2 |   |
|----------------------|--------|-------|--------|------|--------|------|--------|---|
| Conflicting Flow All | 834    | 486   | 9      | 519  | 491    | 64   | 14     | 0 |
| Stage 1              | 475    | 475   | -      | 11   | 11     | -    | -      | - |
| Stage 2              | 359    | 11    | -      | 508  | 480    | -    | -      | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22   | 7.1  | 6.5    | 6.2  | 4.1    | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -      | 6.1  | 5.5    | -    | -      | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -      | 6.1  | 5.5    | -    | -      | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318  | 3.5  | 4      | 3.3  | 2.2    | - |
| Pot Cap-1 Maneuver   | 288    | 481   | 1073   | 471  | 481    | 1006 | 1617   | - |
| Stage 1              | 570    | 557   | -      | 1015 | 890    | -    | -      | - |
| Stage 2              | 659    | 886   | -      | 551  | 558    | -    | -      | - |
| Platoon blocked, %   |        |       |        |      |        |      |        | - |
| Mov Cap-1 Maneuver   | 88     | 405   | 1073   | 362  | 405    | 946  | 1617   | - |
| Mov Cap-2 Maneuver   | 88     | 405   | -      | 362  | 405    | -    | -      | - |
| Stage 1              | 570    | 474   | -      | 1005 | 881    | -    | -      | - |
| Stage 2              | 230    | 877   | -      | 403  | 475    | -    | -      | - |

| Approach             | EB   | WB   | NB | SB  |
|----------------------|------|------|----|-----|
| HCM Control Delay, s | 72.9 | 17.6 | 0  | 7.2 |
| HCM LOS              | F    | C    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1  | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------------|-------|-----|-----|
| Capacity (veh/h)      | 1617 | -   | -   | 159 890     | 1580  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.734 0.693 | 0.148 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 72.9 17.6   | 7.7   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | F C         | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 4.5 5.8     | 0.5   | -   | -   |

Intersection

| Int Delay, s/veh         | 4.1                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 140                                                                               | 10   | 90                                                                                | 215  | 35   | 30                                                                                |
| Future Vol, veh/h        | 140                                                                               | 10   | 90                                                                                | 215  | 35   | 30                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 11   | 0                                                                                 | 3    | 3    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 1                                                                                 | 1    | 0                                                                                 | 0    | 2    | 2                                                                                 |
| Mvmt Flow                | 156                                                                               | 11   | 100                                                                               | 239  | 39   | 33                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |   |       |
|----------------------|--------|--------|--------|---|-------|
| Conflicting Flow All | 334    | 234    | 0      | 0 | 342   |
| Stage 1              | 223    | -      | -      | - | -     |
| Stage 2              | 111    | -      | -      | - | -     |
| Critical Hdwy        | 6.41   | 6.21   | -      | - | 4.12  |
| Critical Hdwy Stg 1  | 5.41   | -      | -      | - | -     |
| Critical Hdwy Stg 2  | 5.41   | -      | -      | - | -     |
| Follow-up Hdwy       | 3.509  | 3.309  | -      | - | 2.218 |
| Pot Cap-1 Maneuver   | 663    | 808    | -      | - | 1217  |
| Stage 1              | 816    | -      | -      | - | -     |
| Stage 2              | 916    | -      | -      | - | -     |
| Platoon blocked, %   |        |        | -      | - | -     |
| Mov Cap-1 Maneuver   | 639    | 797    | -      | - | 1214  |
| Mov Cap-2 Maneuver   | 639    | -      | -      | - | -     |
| Stage 1              | 814    | -      | -      | - | -     |
| Stage 2              | 886    | -      | -      | - | -     |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 12.5 | 0  | 4.3 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 648   | 1214  |
| HCM Lane V/C Ratio    | -   | -        | 0.257 | 0.032 |
| HCM Control Delay (s) | -   | -        | 12.5  | 8.1   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 1     | 0.1   |

### 3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

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#### Intersection

| Int Delay, s/veh         | 2.5                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 15                                                                                | 30   | 10   | 90                                                                                | 35                                                                                | 10   |
| Future Vol, veh/h        | 15                                                                                | 30   | 10   | 90                                                                                | 35                                                                                | 10   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 17                                                                                | 33   | 11   | 100                                                                               | 39                                                                                | 11   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 167    | 45     | 50    | 0      | - | 0 |
| Stage 1              | 45     | -      | -     | -      | - | - |
| Stage 2              | 122    | -      | -     | -      | - | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - | - |
| Pot Cap-1 Maneuver   | 823    | 1025   | 1557  | -      | - | - |
| Stage 1              | 977    | -      | -     | -      | - | - |
| Stage 2              | 903    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 817    | 1025   | 1557  | -      | - | - |
| Mov Cap-2 Maneuver   | 817    | -      | -     | -      | - | - |
| Stage 1              | 970    | -      | -     | -      | - | - |
| Stage 2              | 903    | -      | -     | -      | - | - |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 9  | 0.7 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1557  | -   | 945   | -   | -   |
| HCM Lane V/C Ratio    | 0.007 | -   | 0.053 | -   | -   |
| HCM Control Delay (s) | 7.3   | 0   | 9     | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | 0.2   | -   | -   |



4: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

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Intersection

Int Delay, s/veh 2.3

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 95                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 35   |
| Future Vol, veh/h        | 95                                                                                | 5    | 1    | 235                                                                               | 200                                                                               | 35   |
| Conflicting Peds, #/hr   | 0                                                                                 | 1    | 8    | 0                                                                                 | 0                                                                                 | 8    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 5    | 5                                                                                 | 4                                                                                 | 4    |
| Mvmt Flow                | 103                                                                               | 5    | 1    | 261                                                                               | 222                                                                               | 39   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 513 | 251 | 269   | 0 | - | 0 |
| Stage 1              | 250 | -   | -     | - | - | - |
| Stage 2              | 263 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.15  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver   | 525 | 793 | 1277  | - | - | - |
| Stage 1              | 796 | -   | -     | - | - | - |
| Stage 2              | 786 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 516 | 786 | 1267  | - | - | - |
| Mov Cap-2 Maneuver   | 516 | -   | -     | - | - | - |
| Stage 1              | 789 | -   | -     | - | - | - |
| Stage 2              | 780 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 13.6 | 0 | 0 |
| HCM LOS              | B    |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1267  | - | 525   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.207 | - | - |
| HCM Control Delay (s) | 7.8   | 0 | 13.6  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.8   | - | - |

Intersection

Intersection Delay, s/veh 15  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 135                                                                               | 100  | 85   | 75                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Future Vol, veh/h          | 3    | 135                                                                               | 100  | 85   | 75                                                                                | 50   | 95   | 180                                                                                 | 50   | 30   | 170                                                                                 | 1    |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 4    | 4                                                                                 | 4    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 6    | 6                                                                                   | 6    |
| Mvmt Flow                  | 3    | 150                                                                               | 111  | 94   | 83                                                                                | 56   | 106  | 200                                                                                 | 56   | 33   | 189                                                                                 | 1    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 13.9 |                                                                                   |      | 13.6 |                                                                                   |      | 17.6 |                                                                                     |      | 13.5 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | C    |                                                                                     |      | B    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 29%   | 1%    | 40%   | 15%   |
| Vol Thru, %            | 55%   | 57%   | 36%   | 85%   |
| Vol Right, %           | 15%   | 42%   | 24%   | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 325   | 238   | 210   | 201   |
| LT Vol                 | 95    | 3     | 85    | 30    |
| Through Vol            | 180   | 135   | 75    | 170   |
| RT Vol                 | 50    | 100   | 50    | 1     |
| Lane Flow Rate         | 361   | 264   | 233   | 223   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.6   | 0.445 | 0.407 | 0.394 |
| Departure Headway (Hd) | 5.981 | 6.059 | 6.273 | 6.354 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 603   | 592   | 574   | 565   |
| Service Time           | 4.023 | 4.107 | 4.321 | 4.403 |
| HCM Lane V/C Ratio     | 0.599 | 0.446 | 0.406 | 0.395 |
| HCM Control Delay      | 17.6  | 13.9  | 13.6  | 13.5  |
| HCM Lane LOS           | C     | B     | B     | B     |
| HCM 95th-tile Q        | 4     | 2.3   | 2     | 1.9   |

# 6: Route 120 & Old Etna Rd/Etna Rd Queues

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|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 167                                                                               | 56                                                                                | 83                                                                                | 205                                                                               | 37                                                                                | 79                                                                                | 56                                                                                 | 2783                                                                                | 372                                                                                 | 61                                                                                  | 934                                                                                 |
| v/c Ratio               | 1.30                                                                              | 0.22                                                                              | 0.30                                                                              | 0.86                                                                              | 0.29                                                                              | 0.25                                                                              | 0.54                                                                               | 1.25                                                                                | 0.31                                                                                | 0.61                                                                                | 0.43                                                                                |
| Control Delay           | 230.9                                                                             | 63.6                                                                              | 10.1                                                                              | 95.9                                                                              | 67.8                                                                              | 15.3                                                                              | 82.5                                                                               | 142.9                                                                               | 1.5                                                                                 | 89.2                                                                                | 13.9                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 230.9                                                                             | 63.6                                                                              | 10.1                                                                              | 95.9                                                                              | 67.8                                                                              | 15.3                                                                              | 82.5                                                                               | 142.9                                                                               | 1.5                                                                                 | 89.2                                                                                | 13.9                                                                                |
| Queue Length 50th (ft)  | ~194                                                                              | 25                                                                                | 0                                                                                 | 96                                                                                | 33                                                                                | 7                                                                                 | 50                                                                                 | ~1674                                                                               | 9                                                                                   | 55                                                                                  | 213                                                                                 |
| Queue Length 95th (ft)  | #347                                                                              | 49                                                                                | 40                                                                                | #168                                                                              | 71                                                                                | 54                                                                                | 97                                                                                 | #1791                                                                               | 23                                                                                  | 105                                                                                 | 266                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 128                                                                               | 256                                                                               | 300                                                                               | 237                                                                               | 129                                                                               | 331                                                                               | 126                                                                                | 2225                                                                                | 1198                                                                                | 113                                                                                 | 2183                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 1.30                                                                              | 0.22                                                                              | 0.28                                                                              | 0.86                                                                              | 0.29                                                                              | 0.24                                                                              | 0.44                                                                               | 1.25                                                                                | 0.31                                                                                | 0.54                                                                                | 0.43                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 Build  
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|                                   |  |                                                                                    |  |                                                                                    |  |  |  |                                                                                      |  |  |                                                                                      |  |
|-----------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                                                                                                                 | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |  |   |  |   |  |  |  |   |  |  |   |  |
| Traffic Volume (vph)              | 150                                                                               | 50                                                                                                                                                                  | 75                                                                                | 195                                                                                                                                                                 | 35                                                                                | 75                                                                                | 50                                                                                  | 2505                                                                                                                                                                    | 335                                                                                 | 55                                                                                  | 745                                                                                                                                                                     | 95                                                                                  |
| Future Volume (vph)               | 150                                                                               | 50                                                                                                                                                                  | 75                                                                                | 195                                                                                                                                                                 | 35                                                                                | 75                                                                                | 50                                                                                  | 2505                                                                                                                                                                    | 335                                                                                 | 55                                                                                  | 745                                                                                                                                                                     | 95                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                                                                                                     | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 0.97                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                                                                                                    |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 0.85                                                                                | 1.00                                                                                | 0.98                                                                                                                                                                    |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3330                                                                                                                                                                | 1807                                                                              | 1536                                                                              | 1770                                                                                | 3539                                                                                                                                                                    | 1583                                                                                | 1770                                                                                | 3471                                                                                                                                                                    |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3330                                                                                                                                                                | 1807                                                                              | 1536                                                                              | 1770                                                                                | 3539                                                                                                                                                                    | 1583                                                                                | 1770                                                                                | 3471                                                                                                                                                                    |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.95                                                                                                                                                                | 0.95                                                                              | 0.95                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Adj. Flow (vph)                   | 167                                                                               | 56                                                                                                                                                                  | 83                                                                                | 205                                                                                                                                                                 | 37                                                                                | 79                                                                                | 56                                                                                  | 2783                                                                                                                                                                    | 372                                                                                 | 61                                                                                  | 828                                                                                                                                                                     | 106                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                                                                                                   | 72                                                                                | 0                                                                                                                                                                   | 0                                                                                 | 58                                                                                | 0                                                                                   | 0                                                                                                                                                                       | 89                                                                                  | 0                                                                                   | 7                                                                                                                                                                       | 0                                                                                   |
| Lane Group Flow (vph)             | 167                                                                               | 56                                                                                                                                                                  | 11                                                                                | 205                                                                                                                                                                 | 37                                                                                | 21                                                                                | 56                                                                                  | 2783                                                                                                                                                                    | 283                                                                                 | 61                                                                                  | 927                                                                                                                                                                     | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 1                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                                                                                                  | 0%                                                                                | 2%                                                                                                                                                                  | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                                                                                                      | 2%                                                                                  | 2%                                                                                  | 2%                                                                                                                                                                      | 2%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                                                                                                  | pt+ov                                                                             | Split                                                                                                                                                               | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                                                                                                      | pt+ov                                                                               | Prot                                                                                | NA                                                                                                                                                                      |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                                                                                                   | 3 1                                                                               | 4                                                                                                                                                                   | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                                                                                                       | 6 4                                                                                 | 5                                                                                   | 2                                                                                                                                                                       |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Green, G (s)             | 10.0                                                                              | 10.0                                                                                                                                                                | 18.2                                                                              | 10.0                                                                                                                                                                | 10.0                                                                              | 24.0                                                                              | 8.2                                                                                 | 88.0                                                                                                                                                                    | 98.0                                                                                | 8.0                                                                                 | 87.8                                                                                                                                                                    |                                                                                     |
| Effective Green, g (s)            | 10.0                                                                              | 10.0                                                                                                                                                                | 18.2                                                                              | 10.0                                                                                                                                                                | 10.0                                                                              | 24.0                                                                              | 8.2                                                                                 | 88.0                                                                                                                                                                    | 98.0                                                                                | 8.0                                                                                 | 87.8                                                                                                                                                                    |                                                                                     |
| Actuated g/C Ratio                | 0.07                                                                              | 0.07                                                                                                                                                                | 0.13                                                                              | 0.07                                                                                                                                                                | 0.07                                                                              | 0.17                                                                              | 0.06                                                                                | 0.63                                                                                                                                                                    | 0.70                                                                                | 0.06                                                                                | 0.63                                                                                                                                                                    |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                 | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                                                                                                                 |                                                                                   | 2.0                                                                                                                                                                 | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                | 128                                                                               | 256                                                                                                                                                                 | 208                                                                               | 237                                                                                                                                                                 | 129                                                                               | 263                                                                               | 103                                                                                 | 2224                                                                                                                                                                    | 1108                                                                                | 101                                                                                 | 2176                                                                                                                                                                    |                                                                                     |
| v/s Ratio Prot                    | c0.09                                                                             | 0.02                                                                                                                                                                | 0.01                                                                              | c0.06                                                                                                                                                               | 0.02                                                                              | 0.01                                                                              | 0.03                                                                                | c0.79                                                                                                                                                                   | 0.18                                                                                | c0.03                                                                               | 0.27                                                                                                                                                                    |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| v/c Ratio                         | 1.30                                                                              | 0.22                                                                                                                                                                | 0.05                                                                              | 0.86                                                                                                                                                                | 0.29                                                                              | 0.08                                                                              | 0.54                                                                                | 1.25                                                                                                                                                                    | 0.26                                                                                | 0.60                                                                                | 0.43                                                                                                                                                                    |                                                                                     |
| Uniform Delay, d1                 | 65.0                                                                              | 61.3                                                                                                                                                                | 53.3                                                                              | 64.3                                                                                                                                                                | 61.6                                                                              | 48.7                                                                              | 64.1                                                                                | 26.0                                                                                                                                                                    | 7.7                                                                                 | 64.5                                                                                | 13.3                                                                                                                                                                    |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Incremental Delay, d2             | 182.4                                                                             | 0.2                                                                                                                                                                 | 0.0                                                                               | 25.6                                                                                                                                                                | 0.4                                                                               | 0.0                                                                               | 3.1                                                                                 | 117.0                                                                                                                                                                   | 0.0                                                                                 | 6.8                                                                                 | 0.6                                                                                                                                                                     |                                                                                     |
| Delay (s)                         | 247.4                                                                             | 61.5                                                                                                                                                                | 53.4                                                                              | 89.9                                                                                                                                                                | 62.1                                                                              | 48.8                                                                              | 67.2                                                                                | 143.0                                                                                                                                                                   | 7.7                                                                                 | 71.3                                                                                | 13.9                                                                                                                                                                    |                                                                                     |
| Level of Service                  | F                                                                                 | E                                                                                                                                                                   | D                                                                                 | F                                                                                                                                                                   | E                                                                                 | D                                                                                 | E                                                                                   | F                                                                                                                                                                       | A                                                                                   | E                                                                                   | B                                                                                                                                                                       |                                                                                     |
| Approach Delay (s)                |                                                                                   | 160.7                                                                                                                                                               |                                                                                   |                                                                                                                                                                     | 76.6                                                                              |                                                                                   |                                                                                     | 126.0                                                                                                                                                                   |                                                                                     |                                                                                     | 17.4                                                                                                                                                                    |                                                                                     |
| Approach LOS                      |                                                                                   | F                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | E                                                                                 |                                                                                   |                                                                                     | F                                                                                                                                                                       |                                                                                     |                                                                                     | B                                                                                                                                                                       |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                                                                                                     | 102.6                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                                                                                                     | 1.18                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                                                                                                     | 140.0                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                                                                                                     | 97.2%                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                                                                                                     | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

6: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 Build  
Weekday AM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 16                                                                                | 92                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 93                                                                                |
| Maximum Split (%)      | 11.4%                                                                             | 65.7%                                                                             | 11.4%                                                                             | 11.4%                                                                             | 10.7%                                                                             | 66.4%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 20                                                                                | 36                                                                                | 128                                                                               | 4                                                                                 | 20                                                                                | 35                                                                                |
| End Time (s)           | 36                                                                                | 128                                                                               | 4                                                                                 | 20                                                                                | 35                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 30                                                                                | 122                                                                               | 138                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 30                                                                                | 122                                                                               | 138                                                                               | 14                                                                                | 29                                                                                | 122                                                                               |
| Local Start Time (s)   | 38                                                                                | 54                                                                                | 6                                                                                 | 22                                                                                | 38                                                                                | 53                                                                                |
| Local Yield (s)        | 48                                                                                | 0                                                                                 | 16                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 48                                                                                | 0                                                                                 | 16                                                                                | 32                                                                                | 47                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 16 s                                                                                   | 92 s                                                                                       | 16 s                                                                                     | 16 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 15 s                                                                                   | 93 s                                                                                       |                                                                                          |                                                                                          |



Intersection

Int Delay, s/veh 99.1

Movement EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↗    | ↘    | ↑↑↑  | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 310  | 560  | 3230 | 1335 | 85   |
| Future Vol, veh/h        | 0    | 310  | 560  | 3230 | 1335 | 85   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 93   | 93   |
| Heavy Vehicles, %        | 1    | 1    | 2    | 2    | 4    | 4    |
| Mvmt Flow                | 0    | 344  | 622  | 3589 | 1435 | 91   |

Major/Minor Minor2 Major1 Major2

|                      |   |       |       |   |   |   |
|----------------------|---|-------|-------|---|---|---|
| Conflicting Flow All | - | 763   | 1526  | 0 | - | 0 |
| Stage 1              | - | -     | -     | - | - | - |
| Stage 2              | - | -     | -     | - | - | - |
| Critical Hdwy        | - | 7.12  | 5.34  | - | - | - |
| Critical Hdwy Stg 1  | - | -     | -     | - | - | - |
| Critical Hdwy Stg 2  | - | -     | -     | - | - | - |
| Follow-up Hdwy       | - | 3.91  | 3.12  | - | - | - |
| Pot Cap-1 Maneuver   | 0 | ~ 299 | ~ 216 | - | - | - |
| Stage 1              | 0 | -     | -     | - | - | - |
| Stage 2              | 0 | -     | -     | - | - | - |
| Platoon blocked, %   | - | -     | -     | - | - | - |
| Mov Cap-1 Maneuver   | - | ~ 299 | ~ 216 | - | - | - |
| Mov Cap-2 Maneuver   | - | -     | -     | - | - | - |
| Stage 1              | - | -     | -     | - | - | - |
| Stage 2              | - | -     | -     | - | - | - |

Approach EB NB SB

|                      |       |       |   |
|----------------------|-------|-------|---|
| HCM Control Delay, s | 137.3 | 131.9 | 0 |
| HCM LOS              | F     |       |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |          |   |       |   |   |
|-----------------------|----------|---|-------|---|---|
| Capacity (veh/h)      | ~ 216    | - | 299   | - | - |
| HCM Lane V/C Ratio    | 2.881    | - | 1.152 | - | - |
| HCM Control Delay (s) | \$ 892.8 | - | 137.3 | - | - |
| HCM Lane LOS          | F        | - | F     | - | - |
| HCM 95th %tile Q(veh) | 55       | - | 14.6  | - | - |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon

1: Hanover St & South Site Driveway/Evans Dr  
HCM 6th TWSC

2035 Build  
Weekday PM

Intersection

Int Delay, s/veh 8.3

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 20   | 30   | 0    | 1    | 45   | 85   | 0    | 5    | 5    | 95   | 5    | 25   |
| Future Vol, veh/h        | 20   | 30   | 0    | 1    | 45   | 85   | 0    | 5    | 5    | 95   | 5    | 25   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 22   | 33   | 0    | 1    | 50   | 94   | 0    | 6    | 6    | 106  | 6    | 28   |

| Major/Minor          | Minor2 |       |       | Minor1 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 316    | 244   | 20    | 258    | 255   | 12    | 34     | 0 | 0 | 12     | 0 | 0 |
| Stage 1              | 232    | 232   | -     | 9      | 9     | -     | -      | - | - | -      | - | - |
| Stage 2              | 84     | 12    | -     | 249    | 246   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  | 4.1    | - | - | 4.1    | - | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 | 2.2    | - | - | 2.2    | - | - |
| Pot Cap-1 Maneuver   | 637    | 658   | 1058  | 695    | 649   | 1069  | 1591   | - | - | 1620   | - | - |
| Stage 1              | 771    | 713   | -     | 1012   | 888   | -     | -      | - | - | -      | - | - |
| Stage 2              | 924    | 886   | -     | 755    | 703   | -     | -      | - | - | -      | - | - |
| Platoon blocked, %   |        |       |       |        |       |       |        | - | - |        | - | - |
| Mov Cap-1 Maneuver   | 515    | 614   | 1058  | 632    | 606   | 1066  | 1591   | - | - | 1620   | - | - |
| Mov Cap-2 Maneuver   | 515    | 614   | -     | 632    | 606   | -     | -      | - | - | -      | - | - |
| Stage 1              | 771    | 665   | -     | 1012   | 888   | -     | -      | - | - | -      | - | - |
| Stage 2              | 792    | 886   | -     | 669    | 656   | -     | -      | - | - | -      | - | - |

| Approach             | EB | WB   | NB | SB  |
|----------------------|----|------|----|-----|
| HCM Control Delay, s | 12 | 10.2 | 0  | 5.6 |
| HCM LOS              | B  | B    |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1591 | -   | -   | 570   | 842   | 1620  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.097 | 0.173 | 0.065 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 12    | 10.2  | 7.4   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.3   | 0.6   | 0.2   | -   | -   |

Intersection

Int Delay, s/veh 3.7

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 55                                                                                | 25   | 25                                                                                | 80   | 20   | 45                                                                                |
| Future Vol, veh/h        | 55                                                                                | 25   | 25                                                                                | 80   | 20   | 45                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 61                                                                                | 28   | 28                                                                                | 89   | 22   | 50                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 167    | 73     | 0      |
| Stage 1              | 73     | -      | -      |
| Stage 2              | 94     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 828    | 995    | -      |
| Stage 1              | 955    | -      | -      |
| Stage 2              | 935    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 816    | 995    | -      |
| Mov Cap-2 Maneuver   | 816    | -      | -      |
| Stage 1              | 955    | -      | -      |
| Stage 2              | 921    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 9.6 | 0  | 2.3 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 865   | 1484  |
| HCM Lane V/C Ratio    | -   | -        | 0.103 | 0.015 |
| HCM Control Delay (s) | -   | -        | 9.6   | 7.5   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.3   | 0     |

### 3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

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#### Intersection

| Int Delay, s/veh         | 2.6                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 15   | 25   | 25                                                                                | 50                                                                                | 20   |
| Future Vol, veh/h        | 5                                                                                 | 15   | 25   | 25                                                                                | 50                                                                                | 20   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 6                                                                                 | 17   | 28   | 28                                                                                | 56                                                                                | 22   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |   |
|----------------------|--------|--------|-------|--------|---|---|
| Conflicting Flow All | 151    | 67     | 78    | 0      | - | 0 |
| Stage 1              | 67     | -      | -     | -      | - | - |
| Stage 2              | 84     | -      | -     | -      | - | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - | - |
| Pot Cap-1 Maneuver   | 841    | 997    | 1520  | -      | - | - |
| Stage 1              | 956    | -      | -     | -      | - | - |
| Stage 2              | 939    | -      | -     | -      | - | - |
| Platoon blocked, %   |        |        |       | -      | - | - |
| Mov Cap-1 Maneuver   | 825    | 997    | 1520  | -      | - | - |
| Mov Cap-2 Maneuver   | 825    | -      | -     | -      | - | - |
| Stage 1              | 938    | -      | -     | -      | - | - |
| Stage 2              | 939    | -      | -     | -      | - | - |

| Approach             | EB  | NB  | SB |
|----------------------|-----|-----|----|
| HCM Control Delay, s | 8.9 | 3.7 | 0  |
| HCM LOS              | A   |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1520  | -   | 948   | -   | -   |
| HCM Lane V/C Ratio    | 0.018 | -   | 0.023 | -   | -   |
| HCM Control Delay (s) | 7.4   | 0   | 8.9   | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | 0.1   | -   | -   |

4: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

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Weekday PM

Intersection

Int Delay, s/veh 0.6

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 25                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 60   |
| Future Vol, veh/h        | 25                                                                                | 1    | 1    | 195                                                                               | 390                                                                               | 60   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 1    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 97   | 97                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 6    | 6                                                                                 | 3                                                                                 | 3    |
| Mvmt Flow                | 28                                                                                | 1    | 1    | 201                                                                               | 433                                                                               | 67   |

| Major/Minor | Minor2 | Major1 |  | Major2 |  |
|-------------|--------|--------|--|--------|--|
|-------------|--------|--------|--|--------|--|

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 671 | 468 | 501   | 0 | - | 0 |
| Stage 1              | 468 | -   | -     | - | - | - |
| Stage 2              | 203 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.16  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.254 | - | - | - |
| Pot Cap-1 Maneuver   | 425 | 599 | 1043  | - | - | - |
| Stage 1              | 634 | -   | -     | - | - | - |
| Stage 2              | 836 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 424 | 598 | 1042  | - | - | - |
| Mov Cap-2 Maneuver   | 424 | -   | -     | - | - | - |
| Stage 1              | 633 | -   | -     | - | - | - |
| Stage 2              | 835 | -   | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |    |   |   |
|----------------------|----|---|---|
| HCM Control Delay, s | 14 | 0 | 0 |
| HCM LOS              | B  |   |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1042  | - | 429   | - | - |
| HCM Lane V/C Ratio    | 0.001 | - | 0.067 | - | - |
| HCM Control Delay (s) | 8.5   | 0 | 14    | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.2   | - | - |



Intersection

Intersection Delay, s/veh 14.5  
Intersection LOS B

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 3    | 55                                                                                | 45   | 125  | 55                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Future Vol, veh/h          | 3    | 55                                                                                | 45   | 125  | 55                                                                                | 35   | 25   | 155                                                                                 | 70   | 20   | 350                                                                                 | 5    |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.95 | 0.95                                                                              | 0.95 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 0    | 0                                                                                 | 0    | 2    | 2                                                                                 | 2    | 4    | 4                                                                                   | 4    | 3    | 3                                                                                   | 3    |
| Mvmt Flow                  | 3    | 61                                                                                | 50   | 132  | 58                                                                                | 37   | 28   | 172                                                                                 | 78   | 22   | 389                                                                                 | 6    |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 10.6 |                                                                                   |      | 12.9 |                                                                                   |      | 12.8 |                                                                                     |      | 17.5 |                                                                                     |      |
| HCM LOS                    | B    |                                                                                   |      | B    |                                                                                   |      | B    |                                                                                     |      | C    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 10%   | 3%    | 58%   | 5%    |
| Vol Thru, %            | 62%   | 53%   | 26%   | 93%   |
| Vol Right, %           | 28%   | 44%   | 16%   | 1%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 250   | 103   | 215   | 375   |
| LT Vol                 | 25    | 3     | 125   | 20    |
| Through Vol            | 155   | 55    | 55    | 350   |
| RT Vol                 | 70    | 45    | 35    | 5     |
| Lane Flow Rate         | 278   | 114   | 226   | 417   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.428 | 0.192 | 0.381 | 0.632 |
| Departure Headway (Hd) | 5.547 | 6.029 | 6.063 | 5.457 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 644   | 589   | 588   | 658   |
| Service Time           | 3.62  | 4.121 | 4.143 | 3.52  |
| HCM Lane V/C Ratio     | 0.432 | 0.194 | 0.384 | 0.634 |
| HCM Control Delay      | 12.8  | 10.6  | 12.9  | 17.5  |
| HCM Lane LOS           | B     | B     | B     | C     |
| HCM 95th-tile Q        | 2.1   | 0.7   | 1.8   | 4.5   |

6: Route 120 & Old Etna Rd/Etna Rd  
Queues

2035 Build  
Weekday PM

|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 94                                                                                | 33                                                                                | 72                                                                                | 317                                                                               | 11                                                                                | 67                                                                                | 16                                                                                 | 904                                                                                 | 149                                                                                 | 67                                                                                  | 2273                                                                                |
| v/c Ratio               | 0.78                                                                              | 0.14                                                                              | 0.30                                                                              | 0.97                                                                              | 0.06                                                                              | 0.18                                                                              | 0.21                                                                               | 0.42                                                                                | 0.13                                                                                | 0.59                                                                                | 1.00                                                                                |
| Control Delay           | 101.4                                                                             | 62.4                                                                              | 11.9                                                                              | 104.5                                                                             | 59.0                                                                              | 10.2                                                                              | 70.7                                                                               | 16.0                                                                                | 0.8                                                                                 | 83.4                                                                                | 45.8                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 101.4                                                                             | 62.4                                                                              | 11.9                                                                              | 104.5                                                                             | 59.0                                                                              | 10.2                                                                              | 70.7                                                                               | 16.0                                                                                | 0.8                                                                                 | 83.4                                                                                | 45.8                                                                                |
| Queue Length 50th (ft)  | 85                                                                                | 15                                                                                | 1                                                                                 | ~152                                                                              | 9                                                                                 | 0                                                                                 | 14                                                                                 | 223                                                                                 | 0                                                                                   | 60                                                                                  | ~1158                                                                               |
| Queue Length 95th (ft)  | #177                                                                              | 33                                                                                | 39                                                                                | #254                                                                              | 30                                                                                | 39                                                                                | 40                                                                                 | 278                                                                                 | 10                                                                                  | 112                                                                                 | #1316                                                                               |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 128                                                                               | 256                                                                               | 278                                                                               | 328                                                                               | 178                                                                               | 396                                                                               | 114                                                                                | 2144                                                                                | 1158                                                                                | 140                                                                                 | 2264                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.73                                                                              | 0.13                                                                              | 0.26                                                                              | 0.97                                                                              | 0.06                                                                              | 0.17                                                                              | 0.14                                                                               | 0.42                                                                                | 0.13                                                                                | 0.48                                                                                | 1.00                                                                                |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 Build  
Weekday PM

|                                   |  |                                                                                    |  |                                                                                    |  |  |  |                                                                                      |  |  |                                                                                      |  |
|-----------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                                                                                                                 | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |  |   |  |   |  |  |  |   |  |  |   |  |
| Traffic Volume (vph)              | 85                                                                                | 30                                                                                                                                                                  | 65                                                                                | 285                                                                                                                                                                 | 10                                                                                | 60                                                                                | 15                                                                                  | 850                                                                                                                                                                     | 140                                                                                 | 65                                                                                  | 2115                                                                                                                                                                    | 90                                                                                  |
| Future Volume (vph)               | 85                                                                                | 30                                                                                                                                                                  | 65                                                                                | 285                                                                                                                                                                 | 10                                                                                | 60                                                                                | 15                                                                                  | 850                                                                                                                                                                     | 140                                                                                 | 65                                                                                  | 2115                                                                                                                                                                    | 90                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                                                                                                     | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 0.97                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                                                                                                    |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                                                                                                    |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (prot)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3397                                                                                                                                                                | 1843                                                                              | 1567                                                                              | 1787                                                                                | 3574                                                                                                                                                                    | 1599                                                                                | 1787                                                                                | 3549                                                                                                                                                                    |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (perm)                 | 1796                                                                              | 3592                                                                                                                                                                | 1607                                                                              | 3397                                                                                                                                                                | 1843                                                                              | 1567                                                                              | 1787                                                                                | 3574                                                                                                                                                                    | 1599                                                                                | 1787                                                                                | 3549                                                                                                                                                                    |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.90                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                |
| Adj. Flow (vph)                   | 94                                                                                | 33                                                                                                                                                                  | 72                                                                                | 317                                                                                                                                                                 | 11                                                                                | 67                                                                                | 16                                                                                  | 904                                                                                                                                                                     | 149                                                                                 | 67                                                                                  | 2180                                                                                                                                                                    | 93                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                                                                                                   | 63                                                                                | 0                                                                                                                                                                   | 0                                                                                 | 53                                                                                | 0                                                                                   | 0                                                                                                                                                                       | 45                                                                                  | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| Lane Group Flow (vph)             | 94                                                                                | 33                                                                                                                                                                  | 9                                                                                 | 317                                                                                                                                                                 | 11                                                                                | 14                                                                                | 16                                                                                  | 904                                                                                                                                                                     | 104                                                                                 | 67                                                                                  | 2271                                                                                                                                                                    | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 1                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         | 1                                                                                   |
| Heavy Vehicles (%)                | 0%                                                                                | 0%                                                                                                                                                                  | 0%                                                                                | 0%                                                                                                                                                                  | 0%                                                                                | 0%                                                                                | 1%                                                                                  | 1%                                                                                                                                                                      | 1%                                                                                  | 1%                                                                                  | 1%                                                                                                                                                                      | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                                                                                                  | pt+ov                                                                             | Split                                                                                                                                                               | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                                                                                                      | pt+ov                                                                               | Prot                                                                                | NA                                                                                                                                                                      |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                                                                                                   | 3 1                                                                               | 4                                                                                                                                                                   | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                                                                                                       | 6 4                                                                                 | 5                                                                                   | 2                                                                                                                                                                       |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Green, G (s)             | 9.5                                                                               | 9.5                                                                                                                                                                 | 14.5                                                                              | 13.5                                                                                                                                                                | 13.5                                                                              | 28.5                                                                              | 5.0                                                                                 | 84.0                                                                                                                                                                    | 97.5                                                                                | 9.0                                                                                 | 88.0                                                                                                                                                                    |                                                                                     |
| Effective Green, g (s)            | 9.5                                                                               | 9.5                                                                                                                                                                 | 14.5                                                                              | 13.5                                                                                                                                                                | 13.5                                                                              | 28.5                                                                              | 5.0                                                                                 | 84.0                                                                                                                                                                    | 97.5                                                                                | 9.0                                                                                 | 88.0                                                                                                                                                                    |                                                                                     |
| Actuated g/C Ratio                | 0.07                                                                              | 0.07                                                                                                                                                                | 0.10                                                                              | 0.10                                                                                                                                                                | 0.10                                                                              | 0.20                                                                              | 0.04                                                                                | 0.60                                                                                                                                                                    | 0.70                                                                                | 0.06                                                                                | 0.63                                                                                                                                                                    |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                 | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                                                                                                                 |                                                                                   | 2.0                                                                                                                                                                 | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                | 121                                                                               | 243                                                                                                                                                                 | 166                                                                               | 327                                                                                                                                                                 | 177                                                                               | 318                                                                               | 63                                                                                  | 2144                                                                                                                                                                    | 1113                                                                                | 114                                                                                 | 2230                                                                                                                                                                    |                                                                                     |
| v/s Ratio Prot                    | c0.05                                                                             | 0.01                                                                                                                                                                | 0.01                                                                              | c0.09                                                                                                                                                               | 0.01                                                                              | 0.01                                                                              | 0.01                                                                                | 0.25                                                                                                                                                                    | 0.06                                                                                | c0.04                                                                               | c0.64                                                                                                                                                                   |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| v/c Ratio                         | 0.78                                                                              | 0.14                                                                                                                                                                | 0.06                                                                              | 0.97                                                                                                                                                                | 0.06                                                                              | 0.04                                                                              | 0.25                                                                                | 0.42                                                                                                                                                                    | 0.09                                                                                | 0.59                                                                                | 1.02                                                                                                                                                                    |                                                                                     |
| Uniform Delay, d1                 | 64.2                                                                              | 61.4                                                                                                                                                                | 56.6                                                                              | 63.0                                                                                                                                                                | 57.5                                                                              | 44.8                                                                              | 65.7                                                                                | 15.0                                                                                                                                                                    | 6.9                                                                                 | 63.7                                                                                | 26.0                                                                                                                                                                    |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Incremental Delay, d2             | 24.2                                                                              | 0.1                                                                                                                                                                 | 0.1                                                                               | 40.8                                                                                                                                                                | 0.1                                                                               | 0.0                                                                               | 0.8                                                                                 | 0.6                                                                                                                                                                     | 0.0                                                                                 | 4.9                                                                                 | 23.8                                                                                                                                                                    |                                                                                     |
| Delay (s)                         | 88.4                                                                              | 61.5                                                                                                                                                                | 56.6                                                                              | 103.9                                                                                                                                                               | 57.5                                                                              | 44.8                                                                              | 66.5                                                                                | 15.6                                                                                                                                                                    | 6.9                                                                                 | 68.6                                                                                | 49.8                                                                                                                                                                    |                                                                                     |
| Level of Service                  | F                                                                                 | E                                                                                                                                                                   | E                                                                                 | F                                                                                                                                                                   | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                                                                                                       | A                                                                                   | E                                                                                   | D                                                                                                                                                                       |                                                                                     |
| Approach Delay (s)                |                                                                                   | 72.4                                                                                                                                                                |                                                                                   |                                                                                                                                                                     | 92.6                                                                              |                                                                                   |                                                                                     | 15.2                                                                                                                                                                    |                                                                                     |                                                                                     | 50.4                                                                                                                                                                    |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | F                                                                                 |                                                                                   |                                                                                     | B                                                                                                                                                                       |                                                                                     |                                                                                     | D                                                                                                                                                                       |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                                                                                                     | 46.2                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                                                                                                     | 0.99                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                                                                                                     | 140.0                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                                                                                                     | 88.6%                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                                                                                                     | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

6: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 Build  
Weekday PM

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 15                                                                                | 90                                                                                | 16                                                                                | 19                                                                                | 17                                                                                | 88                                                                                |
| Maximum Split (%)      | 10.7%                                                                             | 64.3%                                                                             | 11.4%                                                                             | 13.6%                                                                             | 12.1%                                                                             | 62.9%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 23                                                                                | 38                                                                                | 128                                                                               | 4                                                                                 | 23                                                                                | 40                                                                                |
| End Time (s)           | 38                                                                                | 128                                                                               | 4                                                                                 | 23                                                                                | 40                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 32                                                                                | 122                                                                               | 138                                                                               | 17                                                                                | 34                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 32                                                                                | 122                                                                               | 138                                                                               | 17                                                                                | 34                                                                                | 122                                                                               |
| Local Start Time (s)   | 41                                                                                | 56                                                                                | 6                                                                                 | 22                                                                                | 41                                                                                | 58                                                                                |
| Local Yield (s)        | 50                                                                                | 0                                                                                 | 16                                                                                | 35                                                                                | 52                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 50                                                                                | 0                                                                                 | 16                                                                                | 35                                                                                | 52                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 150  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s                                                                                   | 90 s                                                                                       | 16 s                                                                                     | 19 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 17 s                                                                                   | 88 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 122.1

| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↗    | ↘    | ↑↑↑  | ↑↑↑  |      |
| Traffic Vol, veh/h       | 0    | 195  | 145  | 1265 | 3125 | 15   |
| Future Vol, veh/h        | 0    | 195  | 145  | 1265 | 3125 | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | 450  | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 98   | 98   | 93   | 93   |
| Heavy Vehicles, %        | 0    | 0    | 2    | 2    | 1    | 1    |
| Mvmt Flow                | 0    | 217  | 148  | 1291 | 3360 | 16   |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | - 1689 | 3377   | 0 - 0  |
| Stage 1              | -      | -      | - - -  |
| Stage 2              | -      | -      | - - -  |
| Critical Hdwy        | - 7.1  | 5.34   | - - -  |
| Critical Hdwy Stg 1  | -      | -      | - - -  |
| Critical Hdwy Stg 2  | -      | -      | - - -  |
| Follow-up Hdwy       | - 3.9  | 3.12   | - - -  |
| Pot Cap-1 Maneuver   | 0 ~ 72 | ~ 24   | - - -  |
| Stage 1              | 0      | -      | - - -  |
| Stage 2              | 0      | -      | - - -  |
| Platoon blocked, %   |        |        | - - -  |
| Mov Cap-1 Maneuver   | - ~ 72 | ~ 24   | - - -  |
| Mov Cap-2 Maneuver   | -      | -      | - - -  |
| Stage 1              | -      | -      | - - -  |
| Stage 2              | -      | -      | - - -  |

| Approach              | EB     | NB    | SB |
|-----------------------|--------|-------|----|
| HCM Control Delay, \$ | 1028.7 | 272.1 | 0  |
| HCM LOS               | F      |       |    |

| Minor Lane/Major Mvmt | NBL       | NBT | EBLn1  | SBT | SBR |
|-----------------------|-----------|-----|--------|-----|-----|
| Capacity (veh/h)      | ~ 24      | -   | 72     | -   | -   |
| HCM Lane V/C Ratio    | 6.165     | -   | 3.009  | -   | -   |
| HCM Control Delay (s) | \$ 2646.3 | \$  | 1028.7 | -   | -   |
| HCM Lane LOS          | F         | -   | F      | -   | -   |
| HCM 95th %tile Q(veh) | 18.5      | -   | 21.8   | -   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Intersection

| Int Delay, s/veh         | 8.1  |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 25   | 35   | 0    | 0    | 40   | 35   | 0    | 0    | 1    | 20   | 1    | 20   |
| Future Vol, veh/h        | 25   | 35   | 0    | 0    | 40   | 35   | 0    | 0    | 1    | 20   | 1    | 20   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 9    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 28   | 39   | 0    | 0    | 44   | 39   | 0    | 0    | 1    | 22   | 1    | 22   |

| Major/Minor          | Minor2 |       |       | Minor1 |     |      | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|-----|------|--------|---|---|--------|---|---|
| Conflicting Flow All | 107    | 57    | 12    | 77     | 68  | 10   | 23     | 0 | 0 | 1      | 0 | 0 |
| Stage 1              | 56     | 56    | -     | 1      | 1   | -    | -      | - | - | -      | - | - |
| Stage 2              | 51     | 1     | -     | 76     | 67  | -    | -      | - | - | -      | - | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22  | 7.1    | 6.5 | 6.2  | 4.1    | - | - | 4.1    | - | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -     | 6.1    | 5.5 | -    | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -     | 6.1    | 5.5 | -    | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 3.5    | 4   | 3.3  | 2.2    | - | - | 2.2    | - | - |
| Pot Cap-1 Maneuver   | 872    | 834   | 1069  | 917    | 826 | 1077 | 1605   | - | - | 1635   | - | - |
| Stage 1              | 956    | 848   | -     | 1027   | 899 | -    | -      | - | - | -      | - | - |
| Stage 2              | 962    | 895   | -     | 938    | 843 | -    | -      | - | - | -      | - | - |
| Platoon blocked, %   |        |       |       |        |     |      |        | - | - | -      | - | - |
| Mov Cap-1 Maneuver   | 790    | 822   | 1069  | 875    | 814 | 1068 | 1605   | - | - | 1635   | - | - |
| Mov Cap-2 Maneuver   | 790    | 822   | -     | 875    | 814 | -    | -      | - | - | -      | - | - |
| Stage 1              | 956    | 836   | -     | 1027   | 899 | -    | -      | - | - | -      | - | - |
| Stage 2              | 874    | 895   | -     | 882    | 831 | -    | -      | - | - | -      | - | - |

| Approach             | EB  |  |  | WB  |  |  | NB |  |  | SB  |  |  |
|----------------------|-----|--|--|-----|--|--|----|--|--|-----|--|--|
| HCM Control Delay, s | 9.9 |  |  | 9.3 |  |  | 0  |  |  | 3.5 |  |  |
| HCM LOS              | A   |  |  | A   |  |  |    |  |  |     |  |  |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1605 | -   | -   | 808   | 916   | 1635  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.083 | 0.091 | 0.014 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 9.9   | 9.3   | 7.2   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | A     | A     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.3   | 0.3   | 0     | -   | -   |

Intersection

|                          |                                                                                   |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 4                                                                                 |      |                                                                                   |      |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 25                                                                                | 20   | 25                                                                                | 35   | 20   | 15                                                                                |
| Future Vol, veh/h        | 25                                                                                | 20   | 25                                                                                | 35   | 20   | 15                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 90                                                                                | 90   | 90                                                                                | 90   | 90   | 90                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 28                                                                                | 22   | 28                                                                                | 39   | 22   | 17                                                                                |

|                      |        |        |   |        |      |
|----------------------|--------|--------|---|--------|------|
| Major/Minor          | Minor1 | Major1 |   | Major2 |      |
| Conflicting Flow All | 109    | 50     | 0 | 0      | 67   |
| Stage 1              | 48     | -      | - | -      | -    |
| Stage 2              | 61     | -      | - | -      | -    |
| Critical Hdwy        | 6.4    | 6.2    | - | -      | 4.1  |
| Critical Hdwy Stg 1  | 5.4    | -      | - | -      | -    |
| Critical Hdwy Stg 2  | 5.4    | -      | - | -      | -    |
| Follow-up Hdwy       | 3.5    | 3.3    | - | -      | 2.2  |
| Pot Cap-1 Maneuver   | 893    | 1024   | - | -      | 1547 |
| Stage 1              | 980    | -      | - | -      | -    |
| Stage 2              | 967    | -      | - | -      | -    |
| Platoon blocked, %   |        |        | - | -      | -    |
| Mov Cap-1 Maneuver   | 880    | 1022   | - | -      | 1547 |
| Mov Cap-2 Maneuver   | 880    | -      | - | -      | -    |
| Stage 1              | 980    | -      | - | -      | -    |
| Stage 2              | 953    | -      | - | -      | -    |

|                      |     |    |     |
|----------------------|-----|----|-----|
| Approach             | WB  | NB | SB  |
| HCM Control Delay, s | 9.1 | 0  | 4.2 |
| HCM LOS              | A   |    |     |

|                       |     |          |       |       |
|-----------------------|-----|----------|-------|-------|
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
| Capacity (veh/h)      | -   | -        | 938   | 1547  |
| HCM Lane V/C Ratio    | -   | -        | 0.053 | 0.014 |
| HCM Control Delay (s) | -   | -        | 9.1   | 7.4   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.2   | 0     |

### 3: Hanover St/Hanover St Ext & North Site Driveway HCM 6th TWSC

2035 Build  
Sat MIDDAY

#### Intersection

| Int Delay, s/veh         | 3.8                                                                               |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Movement                 | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 10                                                                                | 20   | 20   | 25                                                                                | 15                                                                                | 20   |
| Future Vol, veh/h        | 10                                                                                | 20   | 20   | 25                                                                                | 15                                                                                | 20   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 11                                                                                | 22   | 22   | 28                                                                                | 17                                                                                | 22   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 100    | 28     | 39    | 0      | 0 |
| Stage 1              | 28     | -      | -     | -      | - |
| Stage 2              | 72     | -      | -     | -      | - |
| Critical Hdwy        | 6.42   | 6.22   | 4.12  | -      | - |
| Critical Hdwy Stg 1  | 5.42   | -      | -     | -      | - |
| Critical Hdwy Stg 2  | 5.42   | -      | -     | -      | - |
| Follow-up Hdwy       | 3.518  | 3.318  | 2.218 | -      | - |
| Pot Cap-1 Maneuver   | 899    | 1047   | 1571  | -      | - |
| Stage 1              | 995    | -      | -     | -      | - |
| Stage 2              | 951    | -      | -     | -      | - |
| Platoon blocked, %   |        |        |       | -      | - |
| Mov Cap-1 Maneuver   | 886    | 1047   | 1571  | -      | - |
| Mov Cap-2 Maneuver   | 886    | -      | -     | -      | - |
| Stage 1              | 981    | -      | -     | -      | - |
| Stage 2              | 951    | -      | -     | -      | - |

| Approach             | EB  | NB  | SB |
|----------------------|-----|-----|----|
| HCM Control Delay, s | 8.8 | 3.3 | 0  |
| HCM LOS              | A   |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1571  | -   | 987   | -   | -   |
| HCM Lane V/C Ratio    | 0.014 | -   | 0.034 | -   | -   |
| HCM Control Delay (s) | 7.3   | 0   | 8.8   | -   | -   |
| HCM Lane LOS          | A     | A   | A     | -   | -   |
| HCM 95th %tile Q(veh) | 0     | -   | 0.1   | -   | -   |

4: Heater Rd/Mt Support Rd & Hanover St Ext  
HCM 6th TWSC

2035 Build  
Sat MIDDAY

Intersection

Int Delay, s/veh 1.4

Movement EBL EBR NBL NBT SBT SBR

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 30                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 30   |
| Future Vol, veh/h        | 30                                                                                | 0    | 0    | 60                                                                                | 80                                                                                | 30   |
| Conflicting Peds, #/hr   | 3                                                                                 | 3    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow                | 33                                                                                | 0    | 0    | 67                                                                                | 89                                                                                | 33   |

Major/Minor Minor2 Major1 Major2

|                      |     |     |      |   |   |   |
|----------------------|-----|-----|------|---|---|---|
| Conflicting Flow All | 176 | 109 | 122  | 0 | - | 0 |
| Stage 1              | 106 | -   | -    | - | - | - |
| Stage 2              | 70  | -   | -    | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.1  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -    | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -    | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.2  | - | - | - |
| Pot Cap-1 Maneuver   | 818 | 950 | 1478 | - | - | - |
| Stage 1              | 923 | -   | -    | - | - | - |
| Stage 2              | 958 | -   | -    | - | - | - |
| Platoon blocked, %   |     |     |      | - | - | - |
| Mov Cap-1 Maneuver   | 818 | 947 | 1478 | - | - | - |
| Mov Cap-2 Maneuver   | 818 | -   | -    | - | - | - |
| Stage 1              | 923 | -   | -    | - | - | - |
| Stage 2              | 958 | -   | -    | - | - | - |

Approach EB NB SB

|                      |     |   |   |
|----------------------|-----|---|---|
| HCM Control Delay, s | 9.6 | 0 | 0 |
| HCM LOS              | A   |   |   |

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

|                       |      |   |       |   |   |
|-----------------------|------|---|-------|---|---|
| Capacity (veh/h)      | 1478 | - | 818   | - | - |
| HCM Lane V/C Ratio    | -    | - | 0.041 | - | - |
| HCM Control Delay (s) | 0    | - | 9.6   | - | - |
| HCM Lane LOS          | A    | - | A     | - | - |
| HCM 95th %tile Q(veh) | 0    | - | 0.1   | - | - |

Intersection

Intersection Delay, s/veh 8  
Intersection LOS A

| Movement            | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|---------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h  | 0    | 55                                                                                | 5    | 60   | 45                                                                                | 10   | 5    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Future Vol, veh/h   | 0    | 55                                                                                | 5    | 60   | 45                                                                                | 10   | 5    | 50                                                                                  | 30   | 2    | 70                                                                                  | 0    |
| Peak Hour Factor    | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow           | 0    | 61                                                                                | 6    | 67   | 50                                                                                | 11   | 6    | 56                                                                                  | 33   | 2    | 78                                                                                  | 0    |
| Number of Lanes     | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |

| Approach                   | EB  | WB  | NB  | SB |
|----------------------------|-----|-----|-----|----|
| Opposing Approach          | WB  | EB  | SB  | NB |
| Opposing Lanes             | 1   | 1   | 1   | 1  |
| Conflicting Approach Left  | SB  | NB  | EB  | WB |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1  |
| Conflicting Approach Right | NB  | SB  | WB  | EB |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1  |
| HCM Control Delay          | 7.8 | 8.3 | 7.8 | 8  |
| HCM LOS                    | A   | A   | A   | A  |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 6%    | 0%    | 52%   | 3%    |
| Vol Thru, %            | 59%   | 92%   | 39%   | 97%   |
| Vol Right, %           | 35%   | 8%    | 9%    | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 85    | 60    | 115   | 72    |
| LT Vol                 | 5     | 0     | 60    | 2     |
| Through Vol            | 50    | 55    | 45    | 70    |
| RT Vol                 | 30    | 5     | 10    | 0     |
| Lane Flow Rate         | 94    | 67    | 128   | 80    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.111 | 0.081 | 0.157 | 0.099 |
| Departure Headway (Hd) | 4.236 | 4.385 | 4.419 | 4.454 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 848   | 819   | 814   | 806   |
| Service Time           | 2.251 | 2.4   | 2.432 | 2.469 |
| HCM Lane V/C Ratio     | 0.111 | 0.082 | 0.157 | 0.099 |
| HCM Control Delay      | 7.8   | 7.8   | 8.3   | 8     |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.3   | 0.6   | 0.3   |



6: Route 120 & Old Etna Rd/Etna Rd  
Queues

2035 Build  
Sat Midday

|                         |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 |
| Lane Group Flow (vph)   | 67                                                                                | 6                                                                                 | 17                                                                                | 111                                                                               | 6                                                                                 | 28                                                                                | 11                                                                                 | 644                                                                                 | 100                                                                                 | 36                                                                                  | 620                                                                                 |
| v/c Ratio               | 0.55                                                                              | 0.02                                                                              | 0.07                                                                              | 0.52                                                                              | 0.05                                                                              | 0.09                                                                              | 0.15                                                                               | 0.26                                                                                | 0.08                                                                                | 0.38                                                                                | 0.25                                                                                |
| Control Delay           | 78.7                                                                              | 58.6                                                                              | 0.6                                                                               | 71.5                                                                              | 60.8                                                                              | 0.6                                                                               | 69.0                                                                               | 11.3                                                                                | 0.9                                                                                 | 75.0                                                                                | 9.5                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 78.7                                                                              | 58.6                                                                              | 0.6                                                                               | 71.5                                                                              | 60.8                                                                              | 0.6                                                                               | 69.0                                                                               | 11.3                                                                                | 0.9                                                                                 | 75.0                                                                                | 9.5                                                                                 |
| Queue Length 50th (ft)  | 60                                                                                | 2                                                                                 | 0                                                                                 | 51                                                                                | 5                                                                                 | 0                                                                                 | 10                                                                                 | 126                                                                                 | 0                                                                                   | 32                                                                                  | 113                                                                                 |
| Queue Length 95th (ft)  | 109                                                                               | 10                                                                                | 0                                                                                 | 82                                                                                | 20                                                                                | 0                                                                                 | 32                                                                                 | 193                                                                                 | 9                                                                                   | 69                                                                                  | 173                                                                                 |
| Internal Link Dist (ft) |                                                                                   | 539                                                                               |                                                                                   |                                                                                   | 473                                                                               |                                                                                   |                                                                                    | 1647                                                                                |                                                                                     |                                                                                     | 1282                                                                                |
| Turn Bay Length (ft)    | 65                                                                                |                                                                                   |                                                                                   | 300                                                                               |                                                                                   | 75                                                                                | 350                                                                                |                                                                                     | 325                                                                                 | 300                                                                                 |                                                                                     |
| Base Capacity (vph)     | 266                                                                               | 533                                                                               | 420                                                                               | 424                                                                               | 230                                                                               | 392                                                                               | 167                                                                                | 2431                                                                                | 1316                                                                                | 204                                                                                 | 2474                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.25                                                                              | 0.01                                                                              | 0.04                                                                              | 0.26                                                                              | 0.03                                                                              | 0.07                                                                              | 0.07                                                                               | 0.26                                                                                | 0.08                                                                                | 0.18                                                                                | 0.25                                                                                |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# 6: Route 120 & Old Etna Rd/Etna Rd HCM Signalized Intersection Capacity Analysis

2035 Build  
Sat MIDDAY

|                                   |  |                                                                                    |  |                                                                                    |  |  |  |                                                                                      |  |  |                                                                                      |  |
|-----------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                                                                                                                 | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations               |  |   |  |   |  |  |  |   |  |  |   |  |
| Traffic Volume (vph)              | 60                                                                                | 5                                                                                                                                                                   | 15                                                                                | 100                                                                                                                                                                 | 5                                                                                 | 25                                                                                | 10                                                                                  | 580                                                                                                                                                                     | 90                                                                                  | 35                                                                                  | 545                                                                                                                                                                     | 50                                                                                  |
| Future Volume (vph)               | 60                                                                                | 5                                                                                                                                                                   | 15                                                                                | 100                                                                                                                                                                 | 5                                                                                 | 25                                                                                | 10                                                                                  | 580                                                                                                                                                                     | 90                                                                                  | 35                                                                                  | 545                                                                                                                                                                     | 50                                                                                  |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Grade (%)                         |                                                                                   | 1%                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 6%                                                                                |                                                                                   |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |                                                                                     | 0%                                                                                                                                                                      |                                                                                     |
| Total Lost time (s)               | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                                                                                                                 | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                 | 6.0                                                                                                                                                                     | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                                                                                                     | 6.0                                                                                 |
| Lane Util. Factor                 | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 0.97                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                                                                                                    |                                                                                     |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Frt                               | 1.00                                                                              | 1.00                                                                                                                                                                | 0.85                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.85                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 0.85                                                                                | 1.00                                                                                | 0.99                                                                                                                                                                    |                                                                                     |
| Flt Protected                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (prot)                 | 1778                                                                              | 3556                                                                                                                                                                | 1591                                                                              | 3298                                                                                                                                                                | 1789                                                                              | 1521                                                                              | 1805                                                                                | 3610                                                                                                                                                                    | 1615                                                                                | 1787                                                                                | 3523                                                                                                                                                                    |                                                                                     |
| Flt Permitted                     | 0.95                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 0.95                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 0.95                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Satd. Flow (perm)                 | 1778                                                                              | 3556                                                                                                                                                                | 1591                                                                              | 3298                                                                                                                                                                | 1789                                                                              | 1521                                                                              | 1805                                                                                | 3610                                                                                                                                                                    | 1615                                                                                | 1787                                                                                | 3523                                                                                                                                                                    |                                                                                     |
| Peak-hour factor, PHF             | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                                                                                                    | 0.90                                                                                | 0.96                                                                                | 0.96                                                                                                                                                                    | 0.96                                                                                |
| Adj. Flow (vph)                   | 67                                                                                | 6                                                                                                                                                                   | 17                                                                                | 111                                                                                                                                                                 | 6                                                                                 | 28                                                                                | 11                                                                                  | 644                                                                                                                                                                     | 100                                                                                 | 36                                                                                  | 568                                                                                                                                                                     | 52                                                                                  |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                                                                                                   | 16                                                                                | 0                                                                                                                                                                   | 0                                                                                 | 24                                                                                | 0                                                                                   | 0                                                                                                                                                                       | 28                                                                                  | 0                                                                                   | 3                                                                                                                                                                       | 0                                                                                   |
| Lane Group Flow (vph)             | 67                                                                                | 6                                                                                                                                                                   | 1                                                                                 | 111                                                                                                                                                                 | 6                                                                                 | 4                                                                                 | 11                                                                                  | 644                                                                                                                                                                     | 72                                                                                  | 36                                                                                  | 617                                                                                                                                                                     | 0                                                                                   |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   | 1                                                                                   |                                                                                                                                                                         | 1                                                                                   | 1                                                                                   |                                                                                                                                                                         | 1                                                                                   |
| Heavy Vehicles (%)                | 1%                                                                                | 1%                                                                                                                                                                  | 1%                                                                                | 3%                                                                                                                                                                  | 3%                                                                                | 3%                                                                                | 0%                                                                                  | 0%                                                                                                                                                                      | 0%                                                                                  | 1%                                                                                  | 1%                                                                                                                                                                      | 1%                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                                                                                                  | pt+ov                                                                             | Split                                                                                                                                                               | NA                                                                                | pt+ov                                                                             | Prot                                                                                | NA                                                                                                                                                                      | pt+ov                                                                               | Prot                                                                                | NA                                                                                                                                                                      |                                                                                     |
| Protected Phases                  | 3                                                                                 | 3                                                                                                                                                                   | 3 1                                                                               | 4                                                                                                                                                                   | 4                                                                                 | 4 5                                                                               | 1                                                                                   | 6                                                                                                                                                                       | 6 4                                                                                 | 5                                                                                   | 2                                                                                                                                                                       |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Green, G (s)             | 8.6                                                                               | 8.6                                                                                                                                                                 | 12.3                                                                              | 9.1                                                                                                                                                                 | 9.1                                                                               | 21.5                                                                              | 3.7                                                                                 | 91.9                                                                                                                                                                    | 101.0                                                                               | 6.4                                                                                 | 94.6                                                                                                                                                                    |                                                                                     |
| Effective Green, g (s)            | 8.6                                                                               | 8.6                                                                                                                                                                 | 12.3                                                                              | 9.1                                                                                                                                                                 | 9.1                                                                               | 21.5                                                                              | 3.7                                                                                 | 91.9                                                                                                                                                                    | 101.0                                                                               | 6.4                                                                                 | 94.6                                                                                                                                                                    |                                                                                     |
| Actuated g/C Ratio                | 0.06                                                                              | 0.06                                                                                                                                                                | 0.09                                                                              | 0.06                                                                                                                                                                | 0.06                                                                              | 0.15                                                                              | 0.03                                                                                | 0.66                                                                                                                                                                    | 0.72                                                                                | 0.05                                                                                | 0.68                                                                                                                                                                    |                                                                                     |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                                                                                                                 |                                                                                   | 6.0                                                                                                                                                                 | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     | 6.0                                                                                 | 6.0                                                                                                                                                                     |                                                                                     |
| Vehicle Extension (s)             | 2.0                                                                               | 2.0                                                                                                                                                                 |                                                                                   | 2.0                                                                                                                                                                 | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     | 2.0                                                                                 | 3.0                                                                                                                                                                     |                                                                                     |
| Lane Grp Cap (vph)                | 109                                                                               | 218                                                                                                                                                                 | 139                                                                               | 214                                                                                                                                                                 | 116                                                                               | 233                                                                               | 47                                                                                  | 2369                                                                                                                                                                    | 1165                                                                                | 81                                                                                  | 2380                                                                                                                                                                    |                                                                                     |
| v/s Ratio Prot                    | c0.04                                                                             | 0.00                                                                                                                                                                | 0.00                                                                              | c0.03                                                                                                                                                               | 0.00                                                                              | 0.00                                                                              | 0.01                                                                                | c0.18                                                                                                                                                                   | 0.04                                                                                | c0.02                                                                               | c0.18                                                                                                                                                                   |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| v/c Ratio                         | 0.61                                                                              | 0.03                                                                                                                                                                | 0.01                                                                              | 0.52                                                                                                                                                                | 0.05                                                                              | 0.02                                                                              | 0.23                                                                                | 0.27                                                                                                                                                                    | 0.06                                                                                | 0.44                                                                                | 0.26                                                                                                                                                                    |                                                                                     |
| Uniform Delay, d1                 | 64.1                                                                              | 61.8                                                                                                                                                                | 58.3                                                                              | 63.3                                                                                                                                                                | 61.4                                                                              | 50.3                                                                              | 66.8                                                                                | 10.1                                                                                                                                                                    | 5.7                                                                                 | 65.1                                                                                | 8.9                                                                                                                                                                     |                                                                                     |
| Progression Factor                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     |
| Incremental Delay, d2             | 7.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.9                                                                                                                                                                 | 0.1                                                                               | 0.0                                                                               | 0.9                                                                                 | 0.3                                                                                                                                                                     | 0.0                                                                                 | 1.4                                                                                 | 0.3                                                                                                                                                                     |                                                                                     |
| Delay (s)                         | 71.1                                                                              | 61.8                                                                                                                                                                | 58.3                                                                              | 64.2                                                                                                                                                                | 61.5                                                                              | 50.3                                                                              | 67.7                                                                                | 10.3                                                                                                                                                                    | 5.7                                                                                 | 66.5                                                                                | 9.2                                                                                                                                                                     |                                                                                     |
| Level of Service                  | E                                                                                 | E                                                                                                                                                                   | E                                                                                 | E                                                                                                                                                                   | E                                                                                 | D                                                                                 | E                                                                                   | B                                                                                                                                                                       | A                                                                                   | E                                                                                   | A                                                                                                                                                                       |                                                                                     |
| Approach Delay (s)                |                                                                                   | 68.1                                                                                                                                                                |                                                                                   |                                                                                                                                                                     | 61.4                                                                              |                                                                                   |                                                                                     | 10.6                                                                                                                                                                    |                                                                                     |                                                                                     | 12.3                                                                                                                                                                    |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | E                                                                                 |                                                                                   |                                                                                     | B                                                                                                                                                                       |                                                                                     |                                                                                     | B                                                                                                                                                                       |                                                                                     |
| Intersection Summary              |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                                                                                                     | 18.9                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                                                                                                     | 0.33                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                                                                                                     | 140.0                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                                                                                                     | 45.8%                                                                             |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                                                                                                     | 15                                                                                |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

6: Route 120 & Old Etna Rd/Etna Rd  
Timing Report, Sorted By Phase

2035 Build  
Sat MIDDAY

|                        |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Phase Number           | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 |
| Movement               | NBL                                                                               | SBT                                                                               | EBTL                                                                              | WBTL                                                                              | SBL                                                                               | NBT                                                                               |
| Lead/Lag               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               |
| Lead-Lag Optimize      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Recall Mode            | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | Max                                                                               |
| Maximum Split (s)      | 19                                                                                | 70                                                                                | 27                                                                                | 24                                                                                | 22                                                                                | 67                                                                                |
| Maximum Split (%)      | 13.6%                                                                             | 50.0%                                                                             | 19.3%                                                                             | 17.1%                                                                             | 15.7%                                                                             | 47.9%                                                                             |
| Minimum Split (s)      | 15                                                                                | 16                                                                                | 16                                                                                | 16                                                                                | 15                                                                                | 16                                                                                |
| Yellow Time (s)        | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 | 4                                                                                 |
| All-Red Time (s)       | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 |
| Minimum Initial (s)    | 5                                                                                 | 9                                                                                 | 5                                                                                 | 5                                                                                 | 5                                                                                 | 10                                                                                |
| Vehicle Extension (s)  | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Minimum Gap (s)        | 2                                                                                 | 3                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 3                                                                                 |
| Time Before Reduce (s) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Time To Reduce (s)     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Walk Time (s)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Flash Dont Walk (s)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Dual Entry             | No                                                                                | Yes                                                                               | No                                                                                | No                                                                                | No                                                                                | Yes                                                                               |
| Inhibit Max            | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |
| Start Time (s)         | 39                                                                                | 58                                                                                | 128                                                                               | 15                                                                                | 39                                                                                | 61                                                                                |
| End Time (s)           | 58                                                                                | 128                                                                               | 15                                                                                | 39                                                                                | 61                                                                                | 128                                                                               |
| Yield/Force Off (s)    | 52                                                                                | 122                                                                               | 9                                                                                 | 33                                                                                | 55                                                                                | 122                                                                               |
| Yield/Force Off 170(s) | 52                                                                                | 122                                                                               | 9                                                                                 | 33                                                                                | 55                                                                                | 122                                                                               |
| Local Start Time (s)   | 57                                                                                | 76                                                                                | 6                                                                                 | 33                                                                                | 57                                                                                | 79                                                                                |
| Local Yield (s)        | 70                                                                                | 0                                                                                 | 27                                                                                | 51                                                                                | 73                                                                                | 0                                                                                 |
| Local Yield 170(s)     | 70                                                                                | 0                                                                                 | 27                                                                                | 51                                                                                | 73                                                                                | 0                                                                                 |

Intersection Summary

Cycle Length 140  
Control Type Actuated-Coordinated  
Natural Cycle 65  
Offset: 122 (87%), Referenced to phase 2:SBT, Start of Yellow

Splits and Phases: 6: Route 120 & Old Etna Rd/Etna Rd

|                                                                                        |                                                                                            |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 19 s                                                                                   | 70 s                                                                                       | 27 s                                                                                     | 24 s                                                                                     |
|  Ø5 |  Ø6     |                                                                                          |                                                                                          |
| 22 s                                                                                   | 67 s                                                                                       |                                                                                          |                                                                                          |

Intersection

Int Delay, s/veh 0.9

| Movement                 | EBL  | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR  |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |      |  |  |  |  |      |
| Traffic Vol, veh/h       | 0    | 75                                                                                | 75                                                                                | 875                                                                               | 870                                                                               | 5    |
| Future Vol, veh/h        | 0    | 75                                                                                | 75                                                                                | 875                                                                               | 870                                                                               | 5    |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop | Stop                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -    | None                                                                              | -                                                                                 | None                                                                              | -                                                                                 | None |
| Storage Length           | -    | 0                                                                                 | 450                                                                               | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0    | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0    | -                                                                                 | -                                                                                 | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90   | 90                                                                                | 96                                                                                | 96                                                                                | 97                                                                                | 97   |
| Heavy Vehicles, %        | 0    | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1    |
| Mvmt Flow                | 0    | 83                                                                                | 78                                                                                | 911                                                                               | 897                                                                               | 5    |

| Major/Minor          | Minor2 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | 451    | 902    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | 6.9    | 4.12   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | 3.3    | 2.21   |
| Pot Cap-1 Maneuver   | 0      | 561    | 756    |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 0      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | 561    | 756    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 12.5 | 0.8 | 0  |
| HCM LOS              | B    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 756   | -   | 561   | -   | -   |
| HCM Lane V/C Ratio    | 0.103 | -   | 0.149 | -   | -   |
| HCM Control Delay (s) | 10.3  | -   | 12.5  | -   | -   |
| HCM Lane LOS          | B     | -   | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.3   | -   | 0.5   | -   | -   |

## 2034 Build Analysis Worksheets with Improvements

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Intersection

Intersection Delay, s/veh 15.3  
Intersection LOS C

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 45   | 60                                                                                | 0    | 5    | 20                                                                                | 530  | 0    | 0                                                                                   | 1    | 210  | 3                                                                                   | 10   |
| Future Vol, veh/h          | 45   | 60                                                                                | 0    | 5    | 20                                                                                | 530  | 0    | 0                                                                                   | 1    | 210  | 3                                                                                   | 10   |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 2    | 2                                                                                 | 2    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 4    | 4                                                                                   | 4    |
| Mvmt Flow                  | 50   | 67                                                                                | 0    | 6    | 22                                                                                | 589  | 0    | 0                                                                                   | 1    | 233  | 3                                                                                   | 11   |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 9.7  |                                                                                   |      | 17.5 |                                                                                   |      | 8.5  |                                                                                     |      | 12.6 |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | C    |                                                                                   |      | A    |                                                                                     |      | B    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 43%   | 1%    | 94%   |
| Vol Thru, %            | 0%    | 57%   | 4%    | 1%    |
| Vol Right, %           | 100%  | 0%    | 95%   | 4%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 1     | 105   | 555   | 223   |
| LT Vol                 | 0     | 45    | 5     | 210   |
| Through Vol            | 0     | 60    | 20    | 3     |
| RT Vol                 | 1     | 0     | 530   | 10    |
| Lane Flow Rate         | 1     | 117   | 617   | 248   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.002 | 0.179 | 0.721 | 0.4   |
| Departure Headway (Hd) | 5.481 | 5.514 | 4.211 | 5.805 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 654   | 652   | 851   | 624   |
| Service Time           | 3.502 | 3.536 | 2.292 | 3.811 |
| HCM Lane V/C Ratio     | 0.002 | 0.179 | 0.725 | 0.397 |
| HCM Control Delay      | 8.5   | 9.7   | 17.5  | 12.6  |
| HCM Lane LOS           | A     | A     | C     | B     |
| HCM 95th-tile Q        | 0     | 0.6   | 6.4   | 1.9   |

Intersection

Intersection Delay, s/veh 8  
Intersection LOS A

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 20   | 30                                                                                | 0    | 1    | 45                                                                                | 85   | 0    | 5                                                                                   | 5    | 95   | 5                                                                                   | 25   |
| Future Vol, veh/h          | 20   | 30                                                                                | 0    | 1    | 45                                                                                | 85   | 0    | 5                                                                                   | 5    | 95   | 5                                                                                   | 25   |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 2    | 2                                                                                 | 2    | 2    | 2                                                                                 | 2    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow                  | 22   | 33                                                                                | 0    | 1    | 50                                                                                | 94   | 0    | 6                                                                                   | 6    | 106  | 6                                                                                   | 28   |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 7.9  |                                                                                   |      | 7.7  |                                                                                   |      | 7.3  |                                                                                     |      | 8.3  |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | A    |                                                                                   |      | A    |                                                                                     |      | A    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 40%   | 1%    | 76%   |
| Vol Thru, %            | 50%   | 60%   | 34%   | 4%    |
| Vol Right, %           | 50%   | 0%    | 65%   | 20%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 10    | 50    | 131   | 125   |
| LT Vol                 | 0     | 20    | 1     | 95    |
| Through Vol            | 5     | 30    | 45    | 5     |
| RT Vol                 | 5     | 0     | 85    | 25    |
| Lane Flow Rate         | 11    | 56    | 146   | 139   |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.013 | 0.07  | 0.16  | 0.169 |
| Departure Headway (Hd) | 4.185 | 4.504 | 3.954 | 4.387 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 857   | 798   | 910   | 822   |
| Service Time           | 2.201 | 2.516 | 1.964 | 2.387 |
| HCM Lane V/C Ratio     | 0.013 | 0.07  | 0.16  | 0.169 |
| HCM Control Delay      | 7.3   | 7.9   | 7.7   | 8.3   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0     | 0.2   | 0.6   | 0.6   |

Intersection

Intersection Delay, s/veh 7.3  
Intersection LOS A

| Movement                   | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                                 | NBR  | SBL  | SBT                                                                                 | SBR  |
|----------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Lane Configurations        |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h         | 25   | 35                                                                                | 0    | 0    | 40                                                                                | 35   | 0    | 0                                                                                   | 1    | 20   | 1                                                                                   | 20   |
| Future Vol, veh/h          | 25   | 35                                                                                | 0    | 0    | 40                                                                                | 35   | 0    | 0                                                                                   | 1    | 20   | 1                                                                                   | 20   |
| Peak Hour Factor           | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                              | 0.90 | 0.90 | 0.90                                                                                | 0.90 | 0.90 | 0.90                                                                                | 0.90 |
| Heavy Vehicles, %          | 2    | 2                                                                                 | 2    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    | 0    | 0                                                                                   | 0    |
| Mvmt Flow                  | 28   | 39                                                                                | 0    | 0    | 44                                                                                | 39   | 0    | 0                                                                                   | 1    | 22   | 1                                                                                   | 22   |
| Number of Lanes            | 0    | 1                                                                                 | 0    | 0    | 1                                                                                 | 0    | 0    | 1                                                                                   | 0    | 0    | 1                                                                                   | 0    |
| Approach                   | EB   |                                                                                   |      | WB   |                                                                                   |      | NB   |                                                                                     |      | SB   |                                                                                     |      |
| Opposing Approach          | WB   |                                                                                   |      | EB   |                                                                                   |      | SB   |                                                                                     |      | NB   |                                                                                     |      |
| Opposing Lanes             | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Left  | SB   |                                                                                   |      | NB   |                                                                                   |      | EB   |                                                                                     |      | WB   |                                                                                     |      |
| Conflicting Lanes Left     | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| Conflicting Approach Right | NB   |                                                                                   |      | SB   |                                                                                   |      | WB   |                                                                                     |      | EB   |                                                                                     |      |
| Conflicting Lanes Right    | 1    |                                                                                   |      | 1    |                                                                                   |      | 1    |                                                                                     |      | 1    |                                                                                     |      |
| HCM Control Delay          | 7.5  |                                                                                   |      | 7.1  |                                                                                   |      | 6.7  |                                                                                     |      | 7.2  |                                                                                     |      |
| HCM LOS                    | A    |                                                                                   |      | A    |                                                                                   |      | A    |                                                                                     |      | A    |                                                                                     |      |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 42%   | 0%    | 49%   |
| Vol Thru, %            | 0%    | 58%   | 53%   | 2%    |
| Vol Right, %           | 100%  | 0%    | 47%   | 49%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 1     | 60    | 75    | 41    |
| LT Vol                 | 0     | 25    | 0     | 20    |
| Through Vol            | 0     | 35    | 40    | 1     |
| RT Vol                 | 1     | 0     | 35    | 20    |
| Lane Flow Rate         | 1     | 67    | 83    | 46    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.001 | 0.077 | 0.087 | 0.05  |
| Departure Headway (Hd) | 3.592 | 4.161 | 3.75  | 3.963 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 984   | 860   | 953   | 896   |
| Service Time           | 1.66  | 2.192 | 1.785 | 2.022 |
| HCM Lane V/C Ratio     | 0.001 | 0.078 | 0.087 | 0.051 |
| HCM Control Delay      | 6.7   | 7.5   | 7.1   | 7.2   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0     | 0.2   | 0.3   | 0.2   |





## School Dismissal Condition Data

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## Weekday Afternoon Student Dismissal Peak Analysis Summary

- The Hanover Street intersections with Evans Drive and with Old Etna Road have localized afternoon peaks that correspond with school dismissal times (2:00-3:00 PM and 2:15-3:15 PM).
- A limited review of the school dismissal time at the above listed two intersections was completed.
- **2022 Existing Traffic Volumes:**
  - Adjustment factors based on the methodology presented within the body of the traffic study:
    - Seasonal Adjustment = November 2022 traffic counts increased by 13%.
    - Pandemic Adjustment = 2022 peak month traffic volumes increased by 5.4%.
- **2025 No-Build Traffic Volumes:**
  - Historical Growth = increased 2022 Existing traffic volumes along NH Route 120 by a 1% compounded annual growth rate.
  - Background Developments: the Dartmouth Health patient tower expansion project, the Marek at Lebanon, NH multifamily development (343 Mount Support Road), and the apartment development to be constructed at 402 Mount Support Road.
- **2025 Build Traffic Volumes:**
  - ITE has vehicle time of day distributions for Land Use Code 221 – Multifamily Housing (Mid-Rise) that identify the percentage of daily traffic that is distributed to each hour of the day. During the weekday afternoon student dismissal peak, the following site trips were estimated for the proposed development:

**Table A-1 Trip-Generation Summary**

| Peak Hour/Direction                          | Apartment Trips <sup>a</sup> |
|----------------------------------------------|------------------------------|
| <b>Weekday PM School Dismissal Peak Hour</b> |                              |
| Enter                                        | 45                           |
| Exit                                         | 41                           |
| <b>Total</b>                                 | <b>86</b>                    |

<sup>a</sup> ITE Land Use Code 221 (Multifamily Housing [Mid-Rise]) for 474 dwelling units.

- Trips were distributed using the same methodology as the within the body of the traffic study.
  - The project-generated traffic volumes were combined with the No-Build traffic volumes to develop the Build peak-hour traffic-volume networks
- Intersections were analyzed for their operations under 2025 traffic volume conditions during the student dismissal peak as shown in Table A-2.
  - Operations are a LOS B or better for all movements at the two existing Hanover Street intersections as well as at the proposed north site driveway.

**Table A-2 Capacity Analysis Summary 2025 Opening Year Conditions – Student Dismissal Peak**

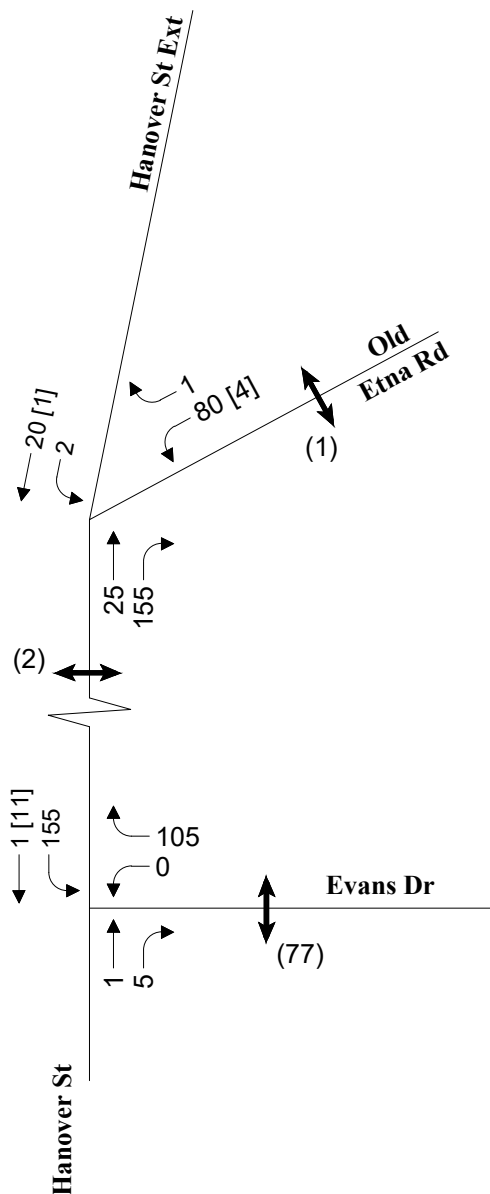
| Intersection/Critical Movement                     | 2025 No-Build |       |     |              |              | 2025 Build |       |     |              |              |
|----------------------------------------------------|---------------|-------|-----|--------------|--------------|------------|-------|-----|--------------|--------------|
|                                                    | v/c           | Delay | LOS | 50th % Queue | 95th % Queue | v/c        | Delay | LOS | 50th % Queue | 95th % Queue |
| <b>Hanover Street and Evans Drive <sup>a</sup></b> |               |       |     |              |              |            |       |     |              |              |
| South Site Driveway EB Approach                    | --            | --    | --  | --           | --           | 0.08       | 15.0  | B   | --           | 8            |
| Evans Dr WB Approach                               | 0.12          | 8.8   | A   | --           | 10           | 0.18       | 10.0  | B   | --           | 15           |
| Hanover St NB Left                                 | --            | --    | --  | --           | --           | --         | --    | --  | --           | --           |
| Hanover St SB Left                                 | 0.13          | 7.6   | A   | --           | 12           | 0.13       | 7.6   | A   | --           | 12           |
| <b>Hanover Street and Old Etna Road</b>            |               |       |     |              |              |            |       |     |              |              |
| Old Etna Rd WB Approach                            | 0.13          | 10.2  | B   | --           | 10           | 0.16       | 10.7  | B   | --           | 15           |
| Hanover St SB Left                                 | 0.00          | 7.8   | A   | --           | 0            | 0.01       | 7.9   | A   | --           | 0            |
| <b>Hanover Street and North Site Driveway</b>      |               |       |     |              |              |            |       |     |              |              |
| North Site Driveway EB Approach                    | --            | --    | --  | --           | --           | 0.02       | 8.7   | A   | --           | 2            |
| Hanover St NB Left                                 | --            | --    | --  | --           | --           | 0.01       | 7.3   | A   | --           | 0            |

v/c = volume-to-capacity ratio.

Delay in seconds.

Queue lengths in feet (unsignalized intersections produce number of vehicles multiplied by standard traffic engineering practice vehicle spacing of 25 feet/vehicle).

a No vehicles were counted or projected on the Hanover Street northbound left-turn movement and no site trips were assigned to this movement.



**LEGEND**  
 XX = Vehicles  
 (XX) = Pedestrians  
 [XX] = Bicycles

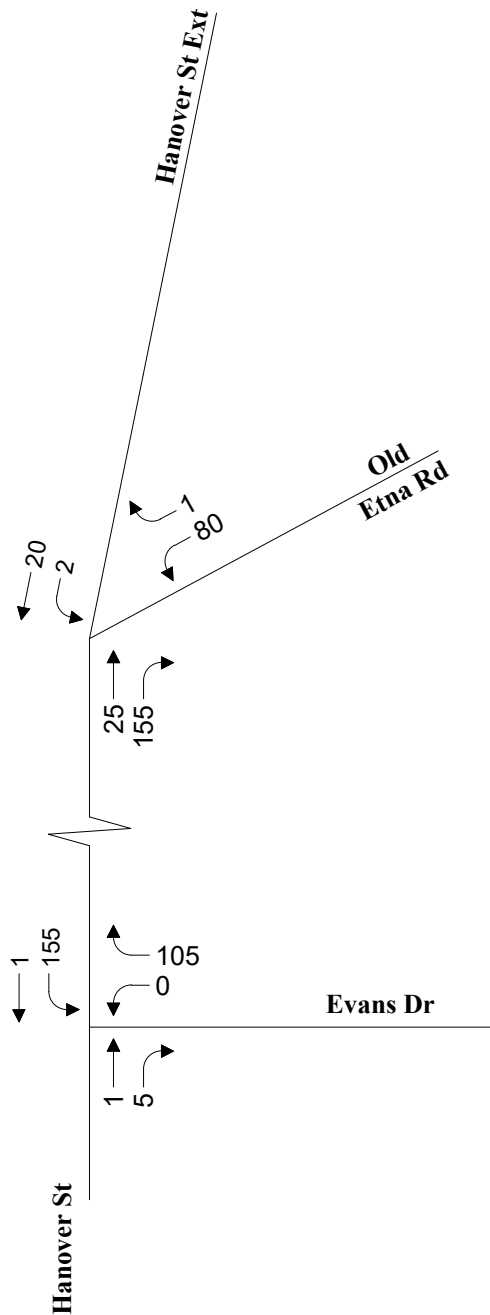
↑  
 Not to Scale



2022 Existing Weekday Afternoon  
 Peak Hour Traffic Volumes

**Figure A-1**





↑  
Not to Scale



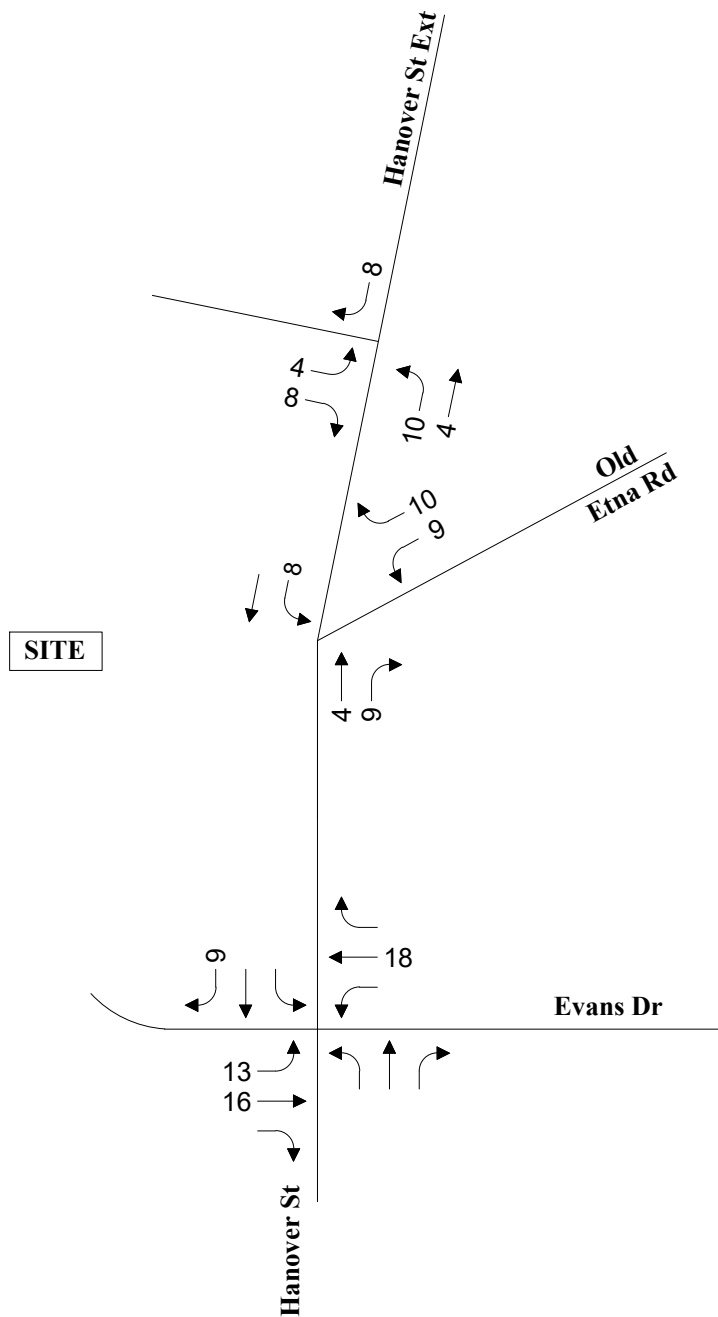
2025 No-Build Weekday Afternoon  
School Dismissal  
Peak Hour Traffic Volumes

**Figure A-2**

| Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use |                                |          |         |                                |          |         |
|-----------------------------------------------------------------------|--------------------------------|----------|---------|--------------------------------|----------|---------|
| Source: ITE Trip Generation Manual, 11th Edition                      |                                |          |         |                                |          |         |
| Land Use Code                                                         | 221                            |          |         | 221                            |          |         |
| Land Use                                                              | Multifamily Housing (Mid-Rise) |          |         | Multifamily Housing (Mid-Rise) |          |         |
| Subcategory                                                           | Not Close to Rail transit      |          |         | Not Close to Rail transit      |          |         |
| Setting                                                               | General Urban/Suburban         |          |         | General Urban/Suburban         |          |         |
| Time Period                                                           | Weekday                        |          |         | Saturday                       |          |         |
| # Data Sites                                                          | 6                              |          |         | 1                              |          |         |
|                                                                       | % of 24-Hour Vehicle Trips     |          |         | % of 24-Hour Vehicle Trips     |          |         |
| Time                                                                  | Total                          | Entering | Exiting | Total                          | Entering | Exiting |
| 12:00 - 1:00 AM                                                       | 0.8%                           | 1.2%     | 0.4%    | 1.8%                           | 2.8%     | 0.8%    |
| 1:00 - 2:00 AM                                                        | 0.4%                           | 0.6%     | 0.3%    | 0.3%                           | 0.4%     | 0.2%    |
| 2:00 - 3:00 AM                                                        | 0.2%                           | 0.3%     | 0.1%    | 0.5%                           | 0.9%     | 0.2%    |
| 3:00 - 4:00 AM                                                        | 0.2%                           | 0.2%     | 0.2%    | 1.7%                           | 2.4%     | 1.0%    |
| 4:00 - 5:00 AM                                                        | 0.3%                           | 0.1%     | 0.5%    | 0.3%                           | 0.4%     | 0.2%    |
| 5:00 - 6:00 AM                                                        | 1.2%                           | 0.4%     | 2.0%    | 0.2%                           | 0.2%     | 0.2%    |
| 6:00 - 7:00 AM                                                        | 4.4%                           | 1.0%     | 7.8%    | 1.2%                           | 0.4%     | 1.9%    |
| 7:00 - 8:00 AM                                                        | 8.6%                           | 2.5%     | 14.7%   | 3.5%                           | 3.0%     | 4.0%    |
| 8:00 - 9:00 AM                                                        | 7.8%                           | 3.0%     | 12.5%   | 3.8%                           | 2.8%     | 4.8%    |
| 9:00 - 10:00 AM                                                       | 4.5%                           | 2.2%     | 6.9%    | 5.8%                           | 3.5%     | 8.1%    |
| 10:00 - 11:00 AM                                                      | 3.7%                           | 2.7%     | 4.6%    | 6.4%                           | 5.0%     | 7.7%    |
| 11:00 - 12:00 PM                                                      | 3.7%                           | 3.4%     | 4.0%    | 6.4%                           | 6.1%     | 6.7%    |
| 12:00 - 1:00 PM                                                       | 4.6%                           | 4.3%     | 4.8%    | 6.6%                           | 4.5%     | 8.5%    |
| 1:00 - 2:00 PM                                                        | 4.4%                           | 4.4%     | 4.4%    | 6.2%                           | 6.9%     | 5.4%    |
| 2:00 - 3:00 PM                                                        | 3.9%                           | 4.1%     | 3.7%    | 7.3%                           | 7.1%     | 7.5%    |
| 3:00 - 4:00 PM                                                        | 4.9%                           | 5.9%     | 3.8%    | 6.7%                           | 8.2%     | 5.2%    |
| 4:00 - 5:00 PM                                                        | 7.2%                           | 9.2%     | 5.1%    | 6.2%                           | 6.3%     | 6.0%    |
| 5:00 - 6:00 PM                                                        | 9.4%                           | 13.1%    | 5.8%    | 7.7%                           | 7.8%     | 7.7%    |
| 6:00 - 7:00 PM                                                        | 9.0%                           | 12.1%    | 6.0%    | 6.8%                           | 6.3%     | 7.3%    |
| 7:00 - 8:00 PM                                                        | 7.4%                           | 9.4%     | 5.4%    | 5.4%                           | 6.9%     | 4.0%    |
| 8:00 - 9:00 PM                                                        | 5.4%                           | 7.7%     | 3.1%    | 4.3%                           | 4.5%     | 4.2%    |
| 9:00 - 10:00 PM                                                       | 4.0%                           | 6.5%     | 1.5%    | 4.0%                           | 4.3%     | 3.7%    |
| 10:00 - 11:00 PM                                                      | 2.6%                           | 3.7%     | 1.6%    | 3.9%                           | 4.8%     | 3.1%    |
| 11:00 - 12:00 AM                                                      | 1.4%                           | 2.1%     | 0.8%    | 3.0%                           | 4.3%     | 1.7%    |
|                                                                       | 100.0%                         | 100.0%   | 100.0%  |                                |          |         |

ITE Land Use Code 221: Multifamily Housing (Mid-Rise)  
474 dwelling units

| Weekday Daily   |                | Saturday Daily  |                |
|-----------------|----------------|-----------------|----------------|
| 1,108 vpd enter | 1,108 vpd exit | 1,032 vpd enter | 1,032 vpd exit |
| 13              | 4              | 29              | 9              |
| 6               | 4              | 4               | 2              |
| 3               | 1              | 9               | 2              |
| 3               | 3              | 25              | 11             |
| 1               | 6              | 4               | 2              |
| 5               | 23             | 2               | 2              |
| 11              | 86             | 4               | 19             |
| 28              | 162            | 31              | 41             |
| 33              | 139            | 29              | 49             |
| 24              | 76             | 36              | 84             |
| 30              | 51             | 51              | 79             |
| 37              | 44             | 63              | 69             |
| 48              | 53             | 47              | 88             |
| 48              | 49             | 71              | 56             |
| 45              | 41             | 74              | 77             |
| 66              | 42             | 85              | 54             |
| 102             | 57             | 65              | 62             |
| 145             | 64             | 80              | 79             |
| 134             | 66             | 65              | 75             |
| 105             | 60             | 71              | 41             |
| 85              | 35             | 47              | 43             |
| 72              | 17             | 45              | 39             |
| 41              | 18             | 49              | 32             |
| 23              | 9              | 45              | 17             |
| 1,108           | 1,108          | 1,032           | 1,032          |

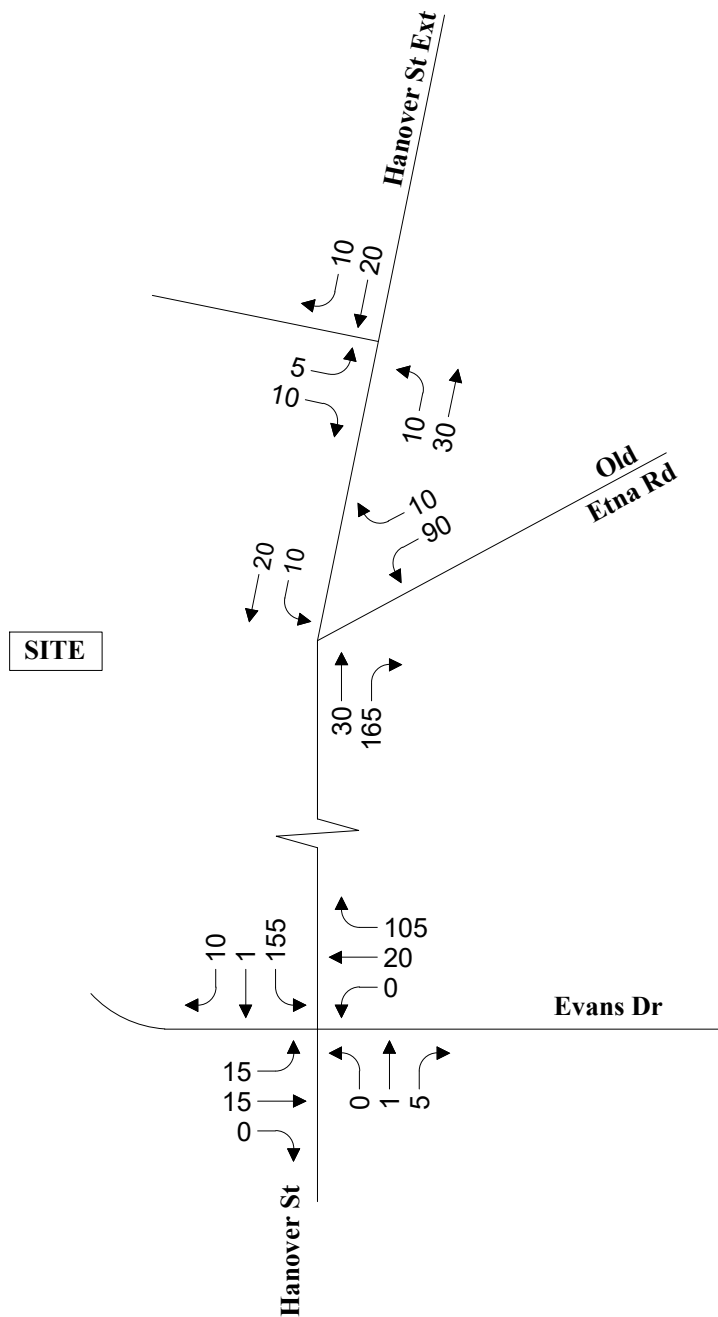


↑  
Not to Scale



Site Trips Weekday Afternoon  
School Dismissal  
Peak Hour Traffic Volumes

**Figure A-3**



↑  
Not to Scale



2025 Build Weekday Afternoon  
School Dismissal  
Peak Hour Traffic Volumes

**Figure A-4**

Intersection

Int Delay, s/veh 7.7

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 105  | 1                                                                                 | 5    | 155  | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 105  | 1                                                                                 | 5    | 155  | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 81                                                                                | 81   | 50                                                                                | 50   | 73   | 73                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 130  | 2                                                                                 | 10   | 212  | 1                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 432    | 10     | 0      |
| Stage 1              | 7      | -      | -      |
| Stage 2              | 425    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 581    | 1071   | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 659    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 505    | 1068   | -      |
| Mov Cap-2 Maneuver   | 505    | -      | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 573    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.8 | 0  | 7.5 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1068  | 1620  |
| HCM Lane V/C Ratio    | -   | -        | 0.121 | 0.131 |
| HCM Control Delay (s) | -   | -        | 8.8   | 7.6   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.4   | 0.5   |



Intersection

| Int Delay, s/veh         | 2.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 80                                                                                | 1    | 25                                                                                | 155  | 2    | 20                                                                                |
| Future Vol, veh/h        | 80                                                                                | 1    | 25                                                                                | 155  | 2    | 20                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 98                                                                                | 1    | 42                                                                                | 263  | 3    | 25                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 205    | 174    | 0      |
| Stage 1              | 174    | -      | -      |
| Stage 2              | 31     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 788    | 875    | -      |
| Stage 1              | 861    | -      | -      |
| Stage 2              | 997    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 786    | 875    | -      |
| Mov Cap-2 Maneuver   | 786    | -      | -      |
| Stage 1              | 861    | -      | -      |
| Stage 2              | 995    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.2 | 0  | 0.7 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 787   | 1267  |
| HCM Lane V/C Ratio    | -   | -        | 0.126 | 0.002 |
| HCM Control Delay (s) | -   | -        | 10.2  | 7.8   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.4   | 0     |

Intersection

Int Delay, s/veh 7.7

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 0                                                                                 | 105  | 1                                                                                 | 5    | 155  | 1                                                                                 |
| Future Vol, veh/h        | 0                                                                                 | 105  | 1                                                                                 | 5    | 155  | 1                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 3    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 81                                                                                | 81   | 50                                                                                | 50   | 73   | 73                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 0                                                                                 | 130  | 2                                                                                 | 10   | 212  | 1                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 432    | 10     | 0      |
| Stage 1              | 7      | -      | -      |
| Stage 2              | 425    | -      | -      |
| Critical Hdwy        | 6.42   | 6.22   | -      |
| Critical Hdwy Stg 1  | 5.42   | -      | -      |
| Critical Hdwy Stg 2  | 5.42   | -      | -      |
| Follow-up Hdwy       | 3.518  | 3.318  | -      |
| Pot Cap-1 Maneuver   | 581    | 1071   | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 659    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 505    | 1068   | -      |
| Mov Cap-2 Maneuver   | 505    | -      | -      |
| Stage 1              | 1016   | -      | -      |
| Stage 2              | 573    | -      | -      |

| Approach             | WB  | NB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 8.8 | 0  | 7.5 |
| HCM LOS              | A   |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 1068  | 1620  |
| HCM Lane V/C Ratio    | -   | -        | 0.121 | 0.131 |
| HCM Control Delay (s) | -   | -        | 8.8   | 7.6   |
| HCM Lane LOS          | -   | -        | A     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.4   | 0.5   |

Intersection

| Int Delay, s/veh         | 2.4                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 80                                                                                | 1    | 25                                                                                | 155  | 2    | 20                                                                                |
| Future Vol, veh/h        | 80                                                                                | 1    | 25                                                                                | 155  | 2    | 20                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 98                                                                                | 1    | 42                                                                                | 263  | 3    | 25                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 205    | 174    | 0      |
| Stage 1              | 174    | -      | -      |
| Stage 2              | 31     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 788    | 875    | -      |
| Stage 1              | 861    | -      | -      |
| Stage 2              | 997    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 786    | 875    | -      |
| Mov Cap-2 Maneuver   | 786    | -      | -      |
| Stage 1              | 861    | -      | -      |
| Stage 2              | 995    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.2 | 0  | 0.7 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT   |
|-----------------------|-----|----------|-------|-------|
| Capacity (veh/h)      | -   | -        | 787   | 1267  |
| HCM Lane V/C Ratio    | -   | -        | 0.126 | 0.002 |
| HCM Control Delay (s) | -   | -        | 10.2  | 7.8   |
| HCM Lane LOS          | -   | -        | B     | A     |
| HCM 95th %tile Q(veh) | -   | -        | 0.4   | 0     |

Intersection

| Int Delay, s/veh         | 8.6  |                                                                                   |      |      |                                                                                   |      |      |                                                                                   |      |      |                                                                                     |      |
|--------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Movement                 | EBL  | EBT                                                                               | EBR  | WBL  | WBT                                                                               | WBR  | NBL  | NBT                                                                               | NBR  | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |      |  |      |      |  |      |      |  |      |      |  |      |
| Traffic Vol, veh/h       | 15   | 15                                                                                | 0    | 0    | 20                                                                                | 105  | 0    | 1                                                                                 | 5    | 155  | 1                                                                                   | 10   |
| Future Vol, veh/h        | 15   | 15                                                                                | 0    | 0    | 20                                                                                | 105  | 0    | 1                                                                                 | 5    | 155  | 1                                                                                   | 10   |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 3    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                   | 0    |
| Sign Control             | Stop | Stop                                                                              | Stop | Stop | Stop                                                                              | Stop | Free | Free                                                                              | Free | Free | Free                                                                                | Free |
| RT Channelized           | -    | -                                                                                 | None | -    | -                                                                                 | None | -    | -                                                                                 | None | -    | -                                                                                   | None |
| Storage Length           | -    | -                                                                                 | -    | -    | -                                                                                 | -    | -    | -                                                                                 | -    | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Grade, %                 | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                 | -    | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 90   | 90                                                                                | 90   | 81   | 81                                                                                | 81   | 50   | 50                                                                                | 50   | 73   | 73                                                                                  | 73   |
| Heavy Vehicles, %        | 2    | 2                                                                                 | 2    | 2    | 2                                                                                 | 2    | 2    | 0                                                                                 | 0    | 0    | 0                                                                                   | 2    |
| Mvmt Flow                | 17   | 17                                                                                | 0    | 0    | 25                                                                                | 130  | 0    | 2                                                                                 | 10   | 212  | 1                                                                                   | 14   |

| Major/Minor          | Minor2 |       | Minor1 |       | Major1 |       | Major2 |   |   |      |   |   |
|----------------------|--------|-------|--------|-------|--------|-------|--------|---|---|------|---|---|
| Conflicting Flow All | 520    | 444   | 8      | 448   | 446    | 10    | 15     | 0 | 0 | 12   | 0 | 0 |
| Stage 1              | 432    | 432   | -      | 7     | 7      | -     | -      | - | - | -    | - | - |
| Stage 2              | 88     | 12    | -      | 441   | 439    | -     | -      | - | - | -    | - | - |
| Critical Hdwy        | 7.12   | 6.52  | 6.22   | 7.12  | 6.52   | 6.22  | 4.12   | - | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | - | - | -    | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318  | 3.518 | 4.018  | 3.318 | 2.218  | - | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 467    | 508   | 1074   | 521   | 507    | 1071  | 1603   | - | - | 1620 | - | - |
| Stage 1              | 602    | 582   | -      | 1015  | 890    | -     | -      | - | - | -    | - | - |
| Stage 2              | 920    | 886   | -      | 595   | 578    | -     | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |       |        |       |        |       |        | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | 352    | 441   | 1074   | 455   | 440    | 1068  | 1603   | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver   | 352    | 441   | -      | 455   | 440    | -     | -      | - | - | -    | - | - |
| Stage 1              | 602    | 505   | -      | 1015  | 890    | -     | -      | - | - | -    | - | - |
| Stage 2              | 784    | 886   | -      | 499   | 502    | -     | -      | - | - | -    | - | - |

| Approach             | EB | WB | NB | SB  |
|----------------------|----|----|----|-----|
| HCM Control Delay, s | 15 | 10 | 0  | 7.1 |
| HCM LOS              | C  | B  |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1  | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------------|-------|-----|-----|
| Capacity (veh/h)      | 1603 | -   | -   | 392 869     | 1620  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.085 0.178 | 0.131 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 15 10       | 7.6   | 0   | -   |
| HCM Lane LOS          | A    | -   | -   | C B         | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.3 0.6     | 0.5   | -   | -   |

Intersection

| Int Delay, s/veh         | 2.9                                                                               |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 90                                                                                | 10   | 30                                                                                | 165  | 10   | 20                                                                                |
| Future Vol, veh/h        | 90                                                                                | 10   | 30                                                                                | 165  | 10   | 20                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 82                                                                                | 82   | 59                                                                                | 59   | 80   | 80                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 110                                                                               | 12   | 51                                                                                | 280  | 13   | 25                                                                                |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 242    | 191    | 0      |
| Stage 1              | 191    | -      | -      |
| Stage 2              | 51     | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 751    | 856    | -      |
| Stage 1              | 846    | -      | -      |
| Stage 2              | 977    | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 743    | 856    | -      |
| Mov Cap-2 Maneuver   | 743    | -      | -      |
| Stage 1              | 846    | -      | -      |
| Stage 2              | 966    | -      | -      |

| Approach             | WB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 10.7 | 0  | 2.6 |
| HCM LOS              | B    |    |     |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 753   | 1240 |
| HCM Lane V/C Ratio    | -   | -        | 0.162 | 0.01 |
| HCM Control Delay (s) | -   | -        | 10.7  | 7.9  |
| HCM Lane LOS          | -   | -        | B     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0.6   | 0    |



Intersection

Int Delay, s/veh 2.4

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|----------|-----|-----|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|-----|-----|

|                          |                                                                                   |      |      |                                                                                   |                                                                                   |      |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 10   | 10   | 30                                                                                | 20                                                                                | 10   |
| Future Vol, veh/h        | 5                                                                                 | 10   | 10   | 30                                                                                | 20                                                                                | 10   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Stop                                                                              | Stop | Free | Free                                                                              | Free                                                                              | Free |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | 0                                                                                 | -    | -    | -                                                                                 | -                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 90                                                                                | 90   | 90   | 90                                                                                | 90                                                                                | 90   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 6                                                                                 | 11   | 11   | 33                                                                                | 22                                                                                | 11   |

| Major/Minor | Minor2 | Major1 | Major2 |
|-------------|--------|--------|--------|
|-------------|--------|--------|--------|

|                      |       |       |       |   |   |   |
|----------------------|-------|-------|-------|---|---|---|
| Conflicting Flow All | 83    | 28    | 33    | 0 | - | 0 |
| Stage 1              | 28    | -     | -     | - | - | - |
| Stage 2              | 55    | -     | -     | - | - | - |
| Critical Hdwy        | 6.42  | 6.22  | 4.12  | - | - | - |
| Critical Hdwy Stg 1  | 5.42  | -     | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.42  | -     | -     | - | - | - |
| Follow-up Hdwy       | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver   | 919   | 1047  | 1579  | - | - | - |
| Stage 1              | 995   | -     | -     | - | - | - |
| Stage 2              | 968   | -     | -     | - | - | - |
| Platoon blocked, %   |       |       |       | - | - | - |
| Mov Cap-1 Maneuver   | 913   | 1047  | 1579  | - | - | - |
| Mov Cap-2 Maneuver   | 913   | -     | -     | - | - | - |
| Stage 1              | 988   | -     | -     | - | - | - |
| Stage 2              | 968   | -     | -     | - | - | - |

| Approach | EB | NB | SB |
|----------|----|----|----|
|----------|----|----|----|

|                      |     |     |   |
|----------------------|-----|-----|---|
| HCM Control Delay, s | 8.7 | 1.8 | 0 |
| HCM LOS              | A   |     |   |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-----|-----|-------|-----|-----|
|-----------------------|-----|-----|-------|-----|-----|

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1579  | - | 998   | - | - |
| HCM Lane V/C Ratio    | 0.007 | - | 0.017 | - | - |
| HCM Control Delay (s) | 7.3   | 0 | 8.7   | - | - |
| HCM Lane LOS          | A     | A | A     | - | - |
| HCM 95th %tile Q(veh) | 0     | - | 0.1   | - | - |



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

August 12, 2024

Tim Corwin, AICP, Deputy Planning and Development Manager  
City of Lebanon  
51 North Park Street  
Lebanon, NH 03766

**RE: The Muse Apartments  
20 Spencer Street  
Lebanon, NH  
Tax Map 92 Lot 31**

Dear Tim,

On behalf of The Muse Lebanon, LLC. (applicant), and the City of Lebanon (owner) please find attached plans, reports and applications associated with the redevelopment of the subject parcel for an affordable multifamily housing development.

The parcel is identified as Tax Map 93, Lot 31 and is approximately 1.92 acres, zoned Lebanon Downtown. The site is mostly a compacted gravel surface with two site driveways on Spencer Street. This project seeks to reoccupy the site and match the residential character of the surrounding neighborhood with the proposed development. The site is currently vacant/used for storage by the municipality. Historically it has been an outdoor storage/facility for the NHDOT and Public works. The site has gone through remediation practices and is currently under groundwater management permit No. 198806030-L-001. The ground water monitoring and reporting has been ongoing for the City by Credere Associates, LLC. The project will incorporate/modify the ongoing monitoring and reporting as necessary.

Our proposed development plan is for 80 rental homes affordable to households earning an average income of 60% of the Grafton County Area Median Income, with several of the units being live-work units with a preference for artists. The development seeks to enrich the streetscape and cultural vibrancy of the downtown area. Funding is anticipated through a combination of public resources, including Low-Income Housing Tax Credits, allocated by the New Hampshire Housing Finance Authority.

The subject property is being developed in accordance with the 20 Spencer Street RFP as proposed by the City of Lebanon. As identified by the developer in the RFP, they seek to redevelop the site at 20 Spencer Street into a vibrant, privately-owned, 100% affordable housing community (the Muse Apartments) that enriches the social fabric and physical landscape of Lebanon's downtown area. The redevelopment follows four key principles as our lodestars:

- Provide high-quality affordable housing for a diverse range of households
- Create spaces that inspire artists and add to the community's cultural vitality
- Develop a site that is connected and integrated with the broader community and streetscape
- Construct a building and physical infrastructure that is energy efficient and lasting

Based on dialogues with the New Hampshire State Council on the Arts' Director of Creative Communities, a lack of affordable housing and studio space—especially a lack live-work spaces for artists—is inextricably connected with the major challenges that creative workers experience in New England. The Muse Apartments

48 Constitution Drive  
Bedford, NH 03110  
Phone (603) 472-4488  
Fax (603) 472-9747  
[www.tfmoran.com](http://www.tfmoran.com)

responds to this need by dedicating units as live-work studios for artists, providing street-level gallery and exhibition space for resident-artists, and offering flexible workspaces and makerspaces throughout the building.

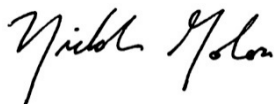
To create a rich, vibrant affordable housing community, we have consciously designed the Muse Apartments to connect with broader context of downtown Lebanon. Taking inspiration from Lebanon's Master Plan and Downtown Visioning Study, the Muse Apartments establishes an inviting and lively presence on Spencer Street. The saw-toothed articulation of the Spencer Street façade creates dynamic visual interest along the street. The color palette and material selections attempt to link the project to the New England vernacular, while still providing a modern look, durability, and cost-efficiency to meet funding requirements. At the same time, the prominent location of the community art gallery space and the dedicated window displays, and stoop spaces associated with the live-work unit establish a mixed-use atmosphere—notwithstanding the fact that the project is 100% affordable housing. Finally, thoughtful landscaping improvements along Spencer Street will help beautify the City's public roadway infrastructure.

The Northern Rail Trail facilitates alternative transportation options and important connections to the Mascoma River and its associated greenways. The design of the Muse Apartments seeks to activate the Rail Trail for its residents. In addition to providing a direct connection from Spencer Street to the trail, the Muse Apartments leans into biking as a viable means of commuting and travel. The ground floor lobby space includes an indoor bike storage and repair station for residents. 20 Spencer Street represents a rare opportunity in the State of New Hampshire to promote modes of transportation without carbon emissions. This rare opportunity justifies a relatively low car-parking ratio with a very high bike-parking ratio that far exceeds the standards of the City of Lebanon Planning Board

Our Project Team is excited to provide this safe, clean, high quality affordable rental housing to Lebanon to help address the City's housing shortage and housing affordability crises.

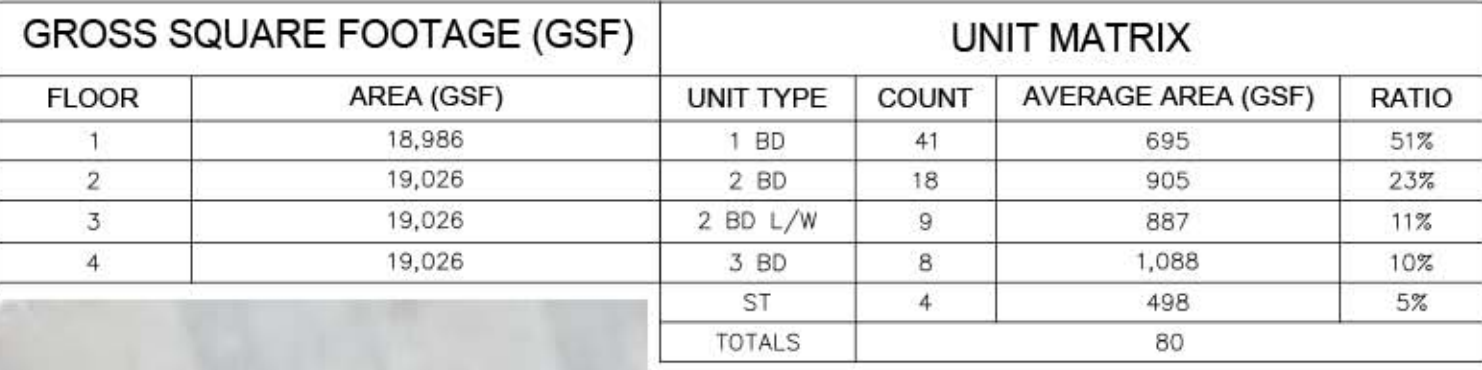
We look forward to reviewing this project with the Planning & Zoning Board, and should there be any questions or concerns regarding this submittal or the project in general please do not hesitate to contact the undersigned at 603.472.4488 or [ngolon@tfmoran.com](mailto:ngolon@tfmoran.com).

Sincerely,  
TFMoran, Inc.

A handwritten signature in black ink, appearing to read "Nicholas Golon". The signature is fluid and cursive, with the first name "Nicholas" and last name "Golon" clearly distinguishable.

Nicholas Golon, P.E.  
Civil Department Manager, Principal





OWNER OF RECORD OF MAP 92 LOT 31: CITY OF LEBANON, 51 NORTH PARK STREET LEBANON, NH 03766

2. DEED REFERENCE TO PARCEL IS BK. 604 PG. 369; BK. 1064 PG. 371; BK. 1725 PG. 936. AREA OF PARCEL = 83,725 S.F. OR 1.92 ACRES. (PER REFERENCE PLAN NO. 1)

3. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A MULTI-FAMILY DEVELOPMENT INCLUDING ONE 4-STORY APARTMENT BUILDING.

4. DIMENSIONAL REQUIREMENTS (CURRENT ZONING: LEBANON DOWNTOWN (LD) AND FLOOD PLAIN OVERLAY)

|                               | REQUIRED: | PROVIDED:              |
|-------------------------------|-----------|------------------------|
| MINIMUM LOT DIMENSIONS:       |           |                        |
| LOT AREA                      | 3,000 SF  | 83,635.2 SF (1.92± AC) |
| LOT FRONTAGE                  | 40 FT     | 451.39 FT              |
| MINIMUM YARD DIMENSIONS:      |           |                        |
| FRONT                         | 0 FT*     | 20.3 FT                |
| SIDE                          | 0 FT*     | 32.6 FT                |
| REAR                          | 0 FT*     | 83.3 FT                |
| MAXIMUM STRUCTURE DIMENSIONS: |           |                        |
| STRUCTURE HEIGHT              | 55 FT     | 46.6 FT                |
| STRUCTURE STORIES             | 2 (MIN.)  | 4 STORIES              |
| BUILDING COVERAGE             | 100%      | 23%                    |

5. PARKING CALCULATIONS  
REQUIRED PARKING RATIO:  
MULTIFAMILY APARTMENTS: 1.5 SPACES/UNIT\*  
TOTAL REQUIRED = 80 UNITS X 1.5 SPACES/UNITS = 120 SPACES\*  
\*OR AS OTHERWISE DETERMINED BY PLANNING BOARD  
PROVIDED = 87 SPACES ONSITE  
REQUIRED EV CHARGING RATIO:  
EVSE 5% = 5 SPACES  
EV CAPABLE 20% = 13 SPACES  
EV READY SPACES 65% = 39 SPACES  
PROVIDED:  
EVSE = 6 SPACES (2 ADA)  
EV CAPABLE SPACES = 18 SPACES  
EV READY SPACES = 33 SPACES  
BICYCLE PARKING CALCULATIONS:  
LONG TERM = 30X X 80 UNITS = 24 SPACES  
SHORT TERM = 15X X 80 UNITS = 12 SPACES  
PROVIDED:  
LONG TERM (INTERIOR) = 80 SPACES  
SHORT TERM (EXTERIOR) = 14 SPACES

6. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

|           |                             |
|-----------|-----------------------------|
| DRAINAGE  | PRIVATE/MUNICIPAL           |
| SEWER     | MUNICIPAL                   |
| WATER     | MUNICIPAL                   |
| GAS       | NA                          |
| ELECTRIC  | LIBERTY UTILITIES           |
| TELEPHONE | CONSOLIDATED COMMUNICATIONS |
| CABLE     | CONSOLIDATED COMMUNICATIONS |

7. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR CRAFTON COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 3300909013E, EFFECTIVE DATE: FEBRUARY 20, 2008, INDICATES THAT A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA: ZONE AE, (1% ANNUAL CHANCE OF FLOODING). FLOOD ZONE AE IS SHOWN TO BE AT ELEVATION 578.1' (NGVD 29) WITH THE ZONE AE FLOODWAY AT ELEVATION 578.4', SEE CROSS SECTION "O" IN THE FIS. THE MAP CITED ABOVE SHOWS THE ENTIRE PARCEL LYING WITH ZONE AE, HOWEVER, A DETAILED FIELD SURVEY INDICATES THAT THE MAJORITY OF THE PARCEL LIES ABOVE THE 578.1' AND THE 578.4' ELEVATION.

8. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL. IN ACCORDANCE WITH N.H.D.E.S. REGULATIONS, IF SNOW IS STORED WITHIN PARKING AREA KEEP CHAINS CLEAR.

9. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.

10. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.

11. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALED REPRODUCED PLANS, IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.

12. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TMOORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS RELATING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

13. IF IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.

14. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.

15. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY OF LEBANON ZONING ORDINANCE AND SITE PLAN REGULATIONS.

16. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.

17. ALL WORK IS TO CONFORM TO CITY OF LEBANON, DIVISION OF PUBLIC WORKS STANDARD SPECIFICATIONS.

TAX MAP 92 LOT 31  
**SURFACE CONDITIONS PLAN**  
**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**  
  
OWNED BY  
**CITY OF LEBANON**  
PREPARED FOR  
**THE MUSE LEBANON, LLC**

**AUGUST 12, 2024**

|      |          |    |     |         |                                |        |
|------|----------|----|-----|---------|--------------------------------|--------|
| FILE | 96202.01 | DR | JED | FB      | -                              | SCP-01 |
|      |          | CK | NG  | CADFILE | <u>SURFACE CONDITIONS PLAN</u> |        |



1. ROUTINE MAINTENANCE OF THE LANDSCAPING WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA IS MEANT TO REDUCE THE FUEL LOAD AND RADIANT HEAT GENERATED NEAR THE BUILDING.
2. THE BUILDING OWNER SHALL MAINTAIN THE LANDSCAPED AREA AND DEFENSIBLE ZONE TO THE REQUIREMENTS OF NFPA 1144, SECTION 6, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - a. GROUND FUELS, INCLUDING NATIVE VEGETATION AND PLANTS USED FOR LANDSCAPING SHALL BE TREATED OR REMOVED. ACCEPTABLE METHODS OF FUEL TREATMENT INCLUDE, BUT ARE NOT LIMITED TO: PRESERVE, PRUNE, REDUCE QUALITY, REDUCE QUANTITY, MOWING, PRUNING, REMOVING, SUBSTITUTION, MULCHING, CONVERTING TO COMPOST, AND GRAZING.
  - b. LANDSCAPED PLANTINGS SHALL POSSESS CHARACTERISTICS TO REDUCE MAINTENANCE SUCH AS DROUGHT RESISTANCE, PEST RESISTANCE, NON-INVASIVE, SLOW GROWING, WIND-RESISTANT PLANTINGS, PLANTINGS WITH LOW FLAMMABILITY, AND PLANTINGS WITH LOW MOISTURE CONTENT.
  - c. TYPICAL FIRE-RESISTANT CHARACTERISTICS SUCH AS HIGH MOISTURE CONTENT IN LEAVES, LOW OIL OR RESIN CONTENT (NOT AROMATIC), DROUGHT TOLERANCE OR RESISTANCE, MINIMAL SEASONAL ACCUMULATION OF DEAD LEAVES, LIMITED FOLIAGE AND FEW DEAD BRANCHES, OPEN CANOPY, BRANDED LEAVES, BUTTERFLY LEAVES, AND OTHER CHARACTERISTICS.
  - d. LIVE VEGETATION WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA SHALL HAVE DEAD MATERIAL REMOVED AND SHALL BE THINNED AND PRUNED REGULARLY. ANY DEAD AND DOWNED FUELS WITHIN 30 FT. OF ALL BUILDINGS SHALL BE REMOVED.
3. THE LANDSCAPED AREA AND DEFENSIBLE ZONE SHALL BE MAINTAINED AS THE LANDSCAPED AREA SHALL BE MAINTAINED AT A HEIGHT THAT WILL PRECLUDE GROUND FIRE FROM SPREADING IN THE TREE CROWN.
4. THE TREE CROWNS WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA SHALL BE SPACED TO PREVENT STRUCTURE IGNITION FROM RADIAN HEAT. RECOMMENDED MINIMUM TREE CROWN SPACING OF 18 FT.
5. THE FACILITIES OWNER AND/OR FACILITY MAINTENANCE STAFF SHALL BE RESPONSIBLE INSPECTING THE CONDITION OF VEGETATION, WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA, EACH YEAR. THE INSPECTION SHALL BE CONDUCTED AT THE SAME TIME OF YEAR, AS WELL AS ANY PRUNING/THINNING THAT MAY BE REQUIRED TO MAINTAIN THE AREA AS OUTLINED ABOVE. LAWN AND MULCHED AREAS SHALL BE MOWED AND MAINTAINED ON A REGULAR BASIS.

 30 FOOT DEFENSIBLE ZONE

 SHARE PARKING AISLE/FIRE LANE

- F1 6" WATER MAIN
- F2 FIRE HYDRANT
- F3 FIRE DEPARTMENT CONNECTION
- F4 24' WIDE PARKING LOT AISLEE
- F5 EMERGENCY VEHICLE TURNAROUND

FIRE PROTECTION DURING CONSTRUCTION SHALL MEET THE REQUIREMENTS OF NFPA 1141, SECTION 9 AND THE PROVISIONS OF NFPA241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. BEFORE THE INFRASTRUCTURE IS INSTALLED, AND PRIOR TO THE LOCATION OF BUILDINGS OR PORTIONS THEREOF, FIRE PROTECTION PLANS SHALL BE SUBMITTED TO AND APPROVED BY THE LEBANON FIRE DEPARTMENT.
2. PRIOR TO THE INSTALLATION OF COMBUSTIBLE MATERIALS AND THE START OF ANY BUILDING CONSTRUCTION, THE WATER SUPPLY FOR FIRE PROTECTION, WHETHER TEMPORARY OR PERMANENT SHALL BE ACCEPTABLE TO THE LEBANON FIRE DEPARTMENT AND SHALL BE INSTALLED AND AVAILABLE FOR USE.
3. PRIOR TO THE START OF ANY BUILDING, THE PERMANENT WATER SUPPLY FOR FIRE PROTECTION INCLUDING FIRE HYDRANTS AND FIRE SUPPRESSION SYSTEMS, SHALL BE INSTALLED, TESTED AND ACCEPTABLE TO THE LEBANON FIRE DEPARTMENT.
4. FIRE DEPARTMENT VEHICULAR ACCESS TO ALL BUILDINGS UNDER CONSTRUCTION SHALL BE PROVIDED AT AVOIDED AT GROUNDS WHERE GROUNDS ARE UNLIKELY TO BECOME SOFT, HARD ALL-WEATHER SURFACE ACCESS ROADS SHALL BE PROVIDED.
5. COMBUSTIBLE TRASH AND DEBRIS SHALL BE PLACED COMPLETELY WITHIN AN APPROVED CONTAINER OR REMOVED FROM THE SITE AT THE CLOSE OF EACH WORKING DAY.
6. FLAMMABLE OR COMBUSTIBLE LIQUIDS CODE: NFPA3, NATIONAL FUEL GAS CODE; AND USED ON THE CONSTRUCTION SITE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF NFPA30, FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE; NFPA54, NATIONAL FUEL GAS CODE; AND NFPA4, LIQUEFIED PETROLEUM GAS CODE.
7. TEMPORARY HEATING DEVICES SHALL BE APPROVED TYPE, LOCATED AWAY FROM COMBUSTIBLE MATERIALS, AND ATTENDED AND MAINTAINED BY COMPETENT PERSONNEL.
8. SMOKING SHALL BE PROHIBITED, EXCEPT IN THOSE AREAS WHERE APPROVED, WHERE REQUIRED BY THE LEBANON FIRE DEPARTMENT, "NO SMOKING" SIGNS SHALL BE POSTED.
9. CUTTING AND WELDING OPERATIONS SHALL BE IN ACCORDANCE WITH NFPA31, STANDARD FOR FIRE PREVENTION DURING WELDING, CUTTING, AND OTHER HOT WORK.
10. EXTINGUISHING EQUIPMENT – AT LEAST ONE PORTABLE FIRE EXTINGUISHER HAVING A RATING OF AT LEAST 10-A – SHALL BE WITHIN A TRAVEL DISTANCE OF 75 FEET OR LESS TO ANY POINT OF BUILDING UNDER CONSTRUCTION. PERSONNEL NORMALLY ON THE CONSTRUCTION SITE SHALL BE INSTRUCTED IN THE USE OF THE FIRE EXTINGUISHERS PROVIDED.

ALL NEW CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 1141; NFPA 1144; AND ALL APPLICABLE LOCAL BUILDING CODES. ALL CONSTRUCTION MATERIALS SHALL MEET THE REQUIREMENTS OF NFPA 1144, SECTION 5, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. ROOF MATERIALS:
  - 1.1. ROOF COVERING ASSEMBLY SHALL BE ONLY LISTED ROOF COVERING, TESTED AND RATED IN ACCORDANCE WITH UL 721 E-108, STANDARD TEST METHODS FOR FIRE TESTS OF ROOF COVERINGS, OR EQUIVALENT AND THE SPECIFIC CLASS SHALL BE CONSISTENT WITH THE WILDLAND FIRE HAZARD ASSESSMENT;
- 1.5. WHERE THE ROOF PROFILE ALLOWS SPACE BETWEEN THE ROOF COVERING AND THE ROOF DECKING, THE SPACE SHALL BE CONSTRUCTED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRE STOPPED WITH APPROVED MATERIALS, OR HAVE ADDITIONAL ASSEMBLY COMPONENTS OF NONCOMBUSTIBLE MATERIALS TO PREVENT IGNITION;
- 1.6. ROOF GUTTERS, DOWNSPOUTS AND CONNECTORS SHALL BE NONCOMBUSTIBLE AND COVERED TO PREVENT THE ACCUMULATION OF DEBRIS. EAVES SHALL BE BOXED IN WITH  $\frac{3}{4}$ " NOMINAL SHEATHING OR NONCOMBUSTIBLE MATERIALS;
- 1.7. VENTS SHALL BE SCREENED WITH A CORROSION RESISTANT, NONCOMBUSTIBLE WIRE MESH WITH OPENINGS NOT TO EXCEED NOMINAL  $\frac{1}{4}$ " IN SIZE;
- 1.8. VENTILATION OPENINGS IN VERTICAL WALLS SHALL BE COVERED WITH NOMINAL  $\frac{1}{4}$ " CORROSION-RESISTANT METAL MESH SCREEN OR OTHER NON COMBUSTIBLE MATERIAL OFFERING EQUIVALENT PROTECTION AND VENTILATION OPENINGS SHALL BE PERMITTED IN SOFFITS, IN EAVE OVERHANGS, BETWEEN RAFTERS OR EAVES, OR ON OTHER OVERHANGING AREAS ON THOSE EXPOSURES FACING HAZARDOUS VEGETATION;
- 2.
- 3.
4. EXTERIOR VERTICAL WALLS:
- 4.1. STRUCTURAL ELEMENTS THAT RESULT IN OR COULD RESULT IN THE COLLECTION OF COMBUSTIBLE MATERIALS PROXIMAL TO THE STRUCTURE SHALL BE PROTECTED.
5. EXTERIOR OPENINGS:
  - 5.1. VENTS FOR ATTIC AND SUB-FLOOR VENTILATION SHALL BE SCREENED WITH A CORROSION RESISTANT WIRE MESH, WITH THE MESH OPENING NOT EXCEEDING NOMINAL  $\frac{1}{4}$ " IN SIZE OR INHIBIT EMBER INTRUSION IN AN APPROVED MANNER.
6. VEHICLE PARKING AREAS – PARKING WITHIN THE IMMEDIATE LANDSCAPED ZONE SHALL BE MAINTAINED FREE OF DRY GRASSES AND FINE FUELS THAT COULD BE IGNITED BY HOT EXHAUST SYSTEMS OR FIRE SPILLS.
7. EXTERIOR EXPOSURE HAZARDS:
  - 7.1. HEAT AND FLAME SOURCES THAT ARE UNPROTECTED OR UNSUPERVISED SHALL NOT BE PERMITTED WITHIN 30 FT. OF THE PRIMARY STRUCTURE, INCINERATORS, OUTDOOR FIREPLACES, PERMANENT BARBECUES, OR GRILLS THAT SHALL NOT BE BUILT, INSTALLED, OR MAINTAINED IN HAZARDOUS FIRE AREAS. OPENINGS IN INCINERATORS, OUTDOOR FIREPLACES, PERMANENT BARBECUES, AND GRILLS SHALL BE PROVIDED WITH AN APPROVED SPARK ARRESTER, SCREEN, OR DOOR;
  - 7.2. OILCANE TANKS AND OTHER FLAMMABLE OR COMBUSTIBLE LIQUIDS STORAGE SHALL CONFORM TO NFPA 58, LIQUEFIED PETROLEUM GAS CODE. OTHER COMBUSTIBLE MATERIALS WITHIN 30 FT. OF ANY STRUCTURE SHALL BE REMOVED.

1. ALL DEVELOPMENT SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 1141 AND NFPA 1144 AS WELL AS ANY OTHER APPLICABLE NFPA OR LOCAL CODES.
2. PRELIMINARY, WORKING AND AS-BUILT PLANS SHALL BE SUBMITTED TO THE LEBANON FIRE DEPARTMENT IN A TIMELY MANNER.
3. ALL BUILDINGS SHALL BE PROTECTED BY AN AUTOMATED SPRINKLER SYSTEM INSTALLED AND MAINTAINED IN ACCORDANCE WITH NFPA 13 AND/OR NFPA 13R AND BUILDINGS SHALL HAVE AN APPROVED FIRE WARNING OR ALARM SYSTEM, DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 72, CAPABLE OF RE-TRANSMITTING AN ALARM TO AN APPROVED CENTRAL STATION.
4. WATER MAINS AND FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH AWWA MANUAL 31 AND NFPA24.
5. ALL FIRE HYDRANT LOCATIONS ARE SUBJECT TO LEBANON FIRE DEPARTMENT APPROVAL.
6. FIRE HYDRANTS SHALL BE MARKED IN ACCORDANCE WITH NFPA 291.
7. THE CONTRACTOR OR INSTALLER OF NEW WATER SUPPLY SYSTEMS OR EXTENSIONS TO EXISTING SYSTEMS SHALL BE REQUIRED BY ACTUALLY BY THE LEBANON FIRE DEPARTMENT. THE SUPPLY SYSTEM WILL MEET THE FIRE PROTECTION DESIGN REQUIREMENTS. LEBANON FIRE DEPARTMENT SHALL BE ON SITE TO WITNESS AND APPROVE THE RESULTS.

TAX MAP 92 LOT 31  
WILDLAND URBAN INTERFACE PLAN  
THE MUSE APARTMENTS  
20 SPENCER STREET LEBANON, NH

OWNED BY  
**CITY OF LEBANON**  
PREPARED FOR  
**THE MUSE LEBANON, LLC**

AUGUST 12, 2024



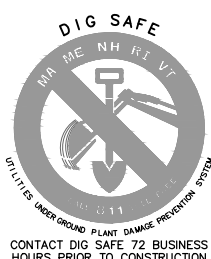
- Civil Engineers
- Structural Engineers
- Traffic Engineers
- Land Surveyors
- Landscape Architects
- Scientists

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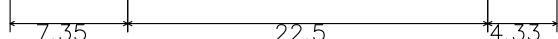
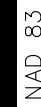


HORIZONTAL SCALE 1"=30'

|      |           |             |    |   |
|------|-----------|-------------|----|---|
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|      |           |             |    |   |
|      |           |             |    |   |
| 1    | 8/26/2024 | CITY REVIEW | JD | N |
| REV. | DATE      | DESCRIPTION | DR | C |

|      |          |    |     |         |            |       |
|------|----------|----|-----|---------|------------|-------|
| FILE | 96202.01 | DR | JED | FB      | -          | WUD-1 |
|      |          | CK | NG  | CADFILE | W-01 - WJD |       |





46.850ft  
8.250ft  
10.894ft  
1.325ft  
6.910ft  
6.00s  
45.00°



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|     |           |             |    |   |
|-----|-----------|-------------|----|---|
| 1   | 8/26/2024 | CITY REVIEW | JD | M |
| REV | DATE      | DESCRIPTION | DR | C |

## TAX MAP 92 LOT 31

OWNED BY

**CITY OF LEBANON**

AUGUST 12, 2024



48 Constitution Drive  
Bedford, NH 03110  
Phone (603) 472-4488  
Fax (603) 472-9747  
[www.tfmorgan.com](http://www.tfmorgan.com)

|      |          |    |     |         |                |      |
|------|----------|----|-----|---------|----------------|------|
| FILE | 96202.01 | DR | JED | FB      | -              | T-01 |
|      |          | CK | NG  | CADFILE | I-01 - TURNING |      |









Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

## TRAFFIC MEMORANDUM

Date: ~~August 9, 2024~~  
*Rev. August 26, 2024*

To: City of Lebanon Planning & Development  
51 N. Park Street, 5<sup>th</sup> Floor  
Lebanon, NH 03766

From: Robert E. Duval, P.E.

Re: **Proposed Workforce Housing**  
20 Spencer Street, Lebanon NH  
TFM Project No. 96202

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### INTRODUCTION

TFMoran has prepared this traffic memo to evaluate trip generation and the roadway network for a proposed affordable housing development at 20 Spencer Street in Lebanon.

“The Muse Lebanon LLC” (applicant) is proposing an 80-unit affordable housing development in a new 4-story building parallel to Spencer Street with a single driveway into a parking lot that wraps around the south and east of the building.

The existing site (Map 92 Lot 31) is zoned “Lebanon Downtown (LD)” and is located on the south side of Spencer Street. The lot is owned by the City and was the former site of the City Public Works Department, recently demolished. The lot is currently vacant.

### DESCRIPTION OF ROADWAY NETWORK

- Access. Access to the site will be provided by a single full-access driveway on Spencer Street. Spencer Street is a City-maintained local street that begins at the intersection of Campbell Street and Parkhurst Street, and dead-ends approximately a half-mile to the east. Spencer Street provides one 12' travel lane in each direction (marked as shared bike lanes) and on-street parallel parking on the south side.
- Adjacent roadway network. The western end of Spencer Street meets Campbell Street at the northeast corner of Colburn Park, (center of downtown area), where traffic has direct access to arterial roadways heading north (Hanover Street), west (Mascoma Street), south (School Street), and east (Bank Street). Traffic on the eastern, dead-end portion of Spencer Street is limited to existing business and residential uses.
- Background volumes. NHDOT lists average daily traffic (AADT) for Bank Street at 6,945 vehicles per day. Weekend volumes are approximately 25% lower than weekday.
- Pedestrian facilities. There are sidewalks along both sides of Spencer Street. The site is connected by sidewalks to Colburn Park, about 1000' away in the center of downtown Lebanon.
- Signage. The speed limit is not posted and the City default speed limit is 25 mph. There are stop signs and street signs at intersections and a “No Outlet” sign.

- Pavement markings. Double-yellow centerline in good condition, shared bike lane striping, and pedestrian crosswalks at intersections and Emerson Place driveway. There is a mid-block crosswalk just west of the Emerson Place driveway.
- Lighting. Cobra head roadway lighting is provided along the roadway.
- Road conditions. The street is generally level with gentle curvature, closed drainage and normal crown. The pavement is newly reconstructed with new vertical granite curbing and sidewalks.
- Sight Distance: Adequate sight distance is provided in both directions.

### **TRIP GENERATION**

Trip generation rates published by the ITE (11<sup>th</sup> Edition) for Land Use Code (LUC) 223, Affordable Housing, was used to calculate the vehicle trips for the proposed development. All trips are Primary Trips.

**Trip Generation – Based on Units**

| <b>Proposed Affordable Housing: 80 Unit (LUC 223)</b> | <b>In</b> | <b>Out</b> | <b>Total</b> |
|-------------------------------------------------------|-----------|------------|--------------|
| <b>PEAK HOUR TRIPS</b>                                |           |            |              |
| Weekday AM Peak Hour of Adjacent Street*              | 12        | 28         | 40           |
| Weekday PM Peak Hour of Adjacent Street               | 22        | 15         | 37           |
| Weekend SAT Peak Hour of the Generator**              | 60        | 42         | 102          |
| <b>DAILY TRIPS</b>                                    |           |            |              |
| Weekday                                               | 219       | 219        | 438          |
| Weekend (SAT)                                         | 480       | 480        | 960          |

\*Peak Hour of Adjacent Street = represents maximum traffic volume at nearest major intersections (e.g. Campbell Street at Park Street).

\*\*Peak hour of Adjacent Street data not available in ITE. Peak hour of Generator used instead (typically 11am to 1pm on Saturday).

Although the general City threshold for traffic studies is 100 trips per hour and 1000 trips daily, in this case the Saturday volume is only 2 trips over the hourly threshold, and all other volumes fall below the applicable threshold. We therefore recommend a waiver of Section 5.1.G(2) that would require a formal traffic study for this project under waiver Criteria B:

**Waiver Criteria B:** *Specific circumstances relative to the site plan, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations.*

A waiver of Section 5.1.G(2) meets Criteria B because:

- (1) On weekdays, the development will add only 37-40 trips during am and pm peak hours and 438 daily trips. The threshold for traffic studies is 100 trips per hour and 1000 trips daily or 1000 trips daily. On weekdays these thresholds are not met.
- (2) On weekends, there are 102 peak hour trips and 960 daily trips. The Saturday peak hourly volume is 2 trips over the threshold, but the daily volume falls below the threshold.
- (3) Although the Saturday peak hour is two trips above the general threshold, traffic counts show that Saturday background traffic is approximately 25% lower than weekday traffic, so the total traffic volume on Spencer Street and Campbell Street will be substantially less than

on weekdays. The lower traffic volumes on Saturday mean that Saturday will not present the “worst case” condition, and analysis of the Saturday case would be unlikely to provide any relevant information, and the weekday volumes fall well below the traffic thresholds.

- (4) Thus in the specific circumstances of this site plan and the surrounding street network, we believe a traffic study is unnecessary, and a waiver of Section 5.1.G(2) would be appropriate and consistent with the spirit and intent of the regulations.

### **CONCLUSION**

Based on the foregoing, we anticipate the traffic impacts from this project to be minimal. The proposed development will add only 37-40 vehicular trips during weekday peak hours (less than one trip per minute) to these low volumes, and about 100 trips during the Saturday peak hour (one to two trips per minute). However, NHDOT traffic counts on Bank Street show that Saturday volumes are about 25% less than during weekdays. The proximity of the site to downtown business and recreational generators will tend to increase pedestrian activity and reduce vehicular volumes below average ITE values.

Site traffic will generally use the western end of Spencer Street to Campbell Street at Colburn Park, where traffic will distribute broadly across all four cardinal directions. Thus average weekday volume increases on any individual roadway will be in the range of 10 cars per hour. The Saturday increase will be higher, but background volumes are substantially lower so these would not be critical volumes for analysis.

These increases fall within the range of day-to-day traffic variations on the major streets. Given these mitigating factors, we do not believe traffic from this project will significantly affect operations along Spencer or Campbell streets and nearby intersections.

In summary, we believe that traffic volumes associated with this proposal can be safely accommodated on the roadway network without need for offsite improvements, and do not rise to a level that warrants a formal traffic study.

Respectfully submitted,

**TFMORAN, INC.**



Robert Duval, PE  
Chief Engineer



| Proposed Trip Generation                  |
|-------------------------------------------|
| Based on ITE Trip Generation 11th Edition |

ITE LUC 223 Affordable Housing: 80 units

| Time Period                          | Variable: |                    | Rate/<br>Eq<br>Used | Trip<br>Ends | Directional<br>Split |     | Directional<br>Distribution |     |
|--------------------------------------|-----------|--------------------|---------------------|--------------|----------------------|-----|-----------------------------|-----|
|                                      | X         | Rate               |                     |              | In                   | Out | In                          | Out |
| Weekday AM Peak Hour Adjacent Street | 80        | 0.50               | Rate                | 40           | 29%                  | 71% | 12                          | 28  |
| Weekday PM Peak Hour Adjacent Street | 80        | 0.46               | Rate                | 37           | 59%                  | 41% | 22                          | 15  |
| Weekend SAT Peak Hour of Generator   | 80        | 1.28               | Rate                | 102          | 59%                  | 41% | 60                          | 42  |
| Weekday Daily                        | 80        | $3.73(X) + 139.35$ | EQ                  | 438          | 50%                  | 50% | 219                         | 219 |
| Weekend (SAT) Daily                  | 80        | 12.00              | Rate                | 960          | 50%                  | 50% | 480                         | 480 |

Description of LUC 223:

Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.



**OWNER**  
MAP 91 LOT 32  
CITY OF LEBANON  
51 NORTH PARK STREET  
LEBANON, NH 03766

**PREPARED FOR**  
THE MUSE LEBANON, LLC  
PO BOX 847  
HOLLIS NH, 03049

**ASSOCIATED PROFESSIONALS**  
**ARCHITECT**  
EMBARC DESIGN  
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BOSTON, MA 02118  
617-765-8000  
DAN RIGGS, AIA

**CIVIL ENGINEER**  
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603-472-4488  
NICHOLAS GOLAN, PE

**SURVEYOR**  
TFMORAN, INC.  
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BEDFORD, NH 03110  
603-472-4488  
MICHAEL DAHLBERG, PLG

**LANDSCAPE ARCHITECT**  
TFMORAN, INC.  
48 CONSTITUTION DRIVE  
BEDFORD, NH 03110  
603-472-4488  
MICHAEL KRZEMINSKI, LLA

**TRAFFIC ENGINEER**  
TFMORAN, INC.  
48 CONSTITUTION DRIVE  
BEDFORD, NH 03110  
603-472-4488  
ROBERT DUVAL, PE

**ABUTTERS**  
MAP 92 LOT 28,  
5-11.5 SPENCER STREET  
LLC  
JANE HILL  
C/O REAL PROPERTY  
MANAGEMENT  
1 SCHOOL STREET, UNIT A  
LEBANON, NH 03766

MAP 92 LOT 29  
BISSON, HELEN L  
15 SPENCER ST  
LEBANON, NH 03766

MAP 92 LOT 30  
CITY OF LEBANON  
51 NORTH PARK STREET  
LEBANON, NH 03766

EASEMENT (BK. 1042  
PG.257)  
CITY OF LEBANON  
51 NORTH PARK STREET  
LEBANON, NH 03766

MAP 92 LOT 33  
SPENCER STREET STORAGE  
LLC  
PO BOX 317  
17 MAPLE STREET  
ENFIELD, NH 03748

MAP 92 LOT 34  
UPPER VALLEY SUPPORTIVE  
HOUSING LIMITED  
PARTNERSHIP  
228 HOLIDAY DRIVE, SUITE  
20  
WHITE RIVER JUNCTION, VT  
05001

MAP 92 LOT 36  
TWIN PINES HOUSING  
TRUST  
228 HOLIDAY DRIVE, SUITE  
20  
WHITE RIVER JUNCTION, VT  
05001

MAP 92 LOT 37  
WALID NASRALLAH, TEE  
NASRALLAH'S ANDENWOOD  
TR.  
11009 ANDENWOOD DRIVE  
AUSTIN, TX 78726

MAP 92 LOT 38  
JOLIN M SALAZAR-KISH  
TRUST  
32 LEBANON ST STE A  
HANOVER, NH 03755

MAP 92 LOT 39  
KENNETH F. LACASSE, T'EE  
KENNETH F. LACASSE  
REVOCABLE TRUST  
PO BOX 921  
QUECHEE, VT 05059

MAP 92 LOT 40  
SCOTT PAULS  
LAURA FINEBERG  
29 PARKHURST STREET  
LEBANON, NH 03766

MAP 92 LOT 41  
CENTRO STORICO LLC  
7 SARGENT STREET  
HANOVER, NH 03755

MAP 92 LOT 42  
CENTRO STORICO LLC  
7 SARGENT STREET  
HANOVER, NH 03755

MAP 92 LOT 43  
COOPER ROBERT A  
37 PARKHURST ST #1  
LEBANON, NH 03766

MAP 92 LOT 78  
EXCUSITE, LLC  
31 ELM ST  
LEBANON, NH 03766

MAP 78 LOT 2  
EMERSON PLACE APTMS  
LLC  
150 PRESIDENTIAL WAY STE  
220  
WOBBURN, MA 01108

MAP 78 LOT 4  
TACKLE PARTNERS LLC  
PO BOX 13  
ETNA, NH 03750

MAP 78 LOT 5  
TACKLE PARTNERS LLC  
PO BOX 13  
ETNA, NH 03750

MAP 78 LOT 39  
MASON STORAGE, LLC  
38 SPENCER STREET  
LEBANON, NH 03766

**NORTHERN RAIL TRAIL**  
STATE OF NH DEPT. OF  
TRANSPORTATION  
PO BOX 483  
CONCORD, NH  
03302-04863

THE FOLLOWING WAIVERS FROM THE CITY OF LEBANON SITE PLAN REVIEW REGULATIONS ARE REQUESTED FROM THE PLANNING BOARD:

1. SECTION 5.1.G(2)  
TO PERMIT A TRIP GENERATION MEMO VS. A TRAFFIC IMPACT STUDY
2. SECTION 6.2.B.1.A.  
5' MIN. LANDSCAPE AREA WHERE 10' REQUIRED  
6.2.B.4  
TO PERMIT TREES PLANTED AT THE PROPERTY LINE WHERE 8' REQUIRED
4. SECTION 6.2.B.6  
TO PERMIT 7' ADDITIONAL PERIMETER WIDTH ON WEST SIDE WHERE 10' REQUIRED
5. SECTION 6.2.D.1.  
TO PERMIT 5' LANDSCAPE AROUND SOME PORTIONS OF BUILDING WHERE 10' REQUIRED
6. SECTION 6.6.C.1.2.K  
TO WAIVE DRAINAGE TEST PITS DUE TO HISTORIC SOILS AND GROUNDWATER DATA
7. SECTION 6.6.G.  
TO PERMIT AN ALTERNATIVE STORMWATER DESIGN CONSISTING OF PRETREATMENT ONLY

| SHEET                                              | SHEET TITLE                                 |
|----------------------------------------------------|---------------------------------------------|
| C-01                                               | COVER SHEET                                 |
| C-02                                               | NOTES & LEGEND                              |
| C-03                                               | NOTES                                       |
| S-01                                               | EXISTING CONDITIONS PLAN                    |
| C-04                                               | SITE PREPARATION AND DEMOLITION PLAN        |
| C-05                                               | SITE LAYOUT PLAN                            |
| C-06                                               | GRADING AND DRAINAGE PLAN                   |
| C-07                                               | ENTRANCE SIGHT DISTANCE PLAN AND PROFILE    |
| C-08                                               | UTILITY PLAN                                |
| C-09                                               | STORMWATER MANAGEMENT PLAN                  |
| C-10                                               | LANDSCAPING PLAN                            |
| D-01 TO D-09                                       | DETAILS                                     |
| <u>REFERENCE PLANS BY ASSOCIATED PROFESSIONALS</u> |                                             |
| L-01                                               | LIGHTING PLAN                               |
| A100                                               | BUILDING FLOOR PLAN (BY EMBARC DESIGN)      |
| A200                                               | ARCHITECTURAL ELEVATIONS (BY EMBARC DESIGN) |

|                                   | NUMBER | APPROVED | EXPIRES |
|-----------------------------------|--------|----------|---------|
| CITY SITE APPROVAL                |        |          |         |
| CITY CUP – SECTION 307.6.B.2      |        |          |         |
| CITY CUP – SECTION 307.6.B.2      |        |          |         |
| NHDES SEWER CONNECTION PERMIT     |        |          |         |
| EPA NPDES ENO CQP & SWPPP         |        |          |         |
| BUILDING PERMIT                   |        |          |         |
| CITY EXCAVATION PERMIT            |        |          |         |
| CITY DRIVEWAY PERMIT              |        |          |         |
| CITY STORMWATER CONNECTION PERMIT |        |          |         |
| CITY WATER USE PERMIT             |        |          |         |
| CITY SEWER USE PERMIT             |        |          |         |

| GROSS FLOOR AREA (GFA) |          |
|------------------------|----------|
| EXISTING               | PROPOSED |
| 0 SF                   | 76,064   |

| GROSS SQUARE FOOTAGE (GSF) |            |
|----------------------------|------------|
| FLOOR                      | AREA (GSF) |
| 1                          | 18,986     |
| 2                          | 19,026     |
| 3                          | 19,026     |
| 4                          | 19,026     |

| SITE DATA TABLE       |                                                              |
|-----------------------|--------------------------------------------------------------|
| ZONING DESIGNATION    | LEBANON DOWNTOWN DISTRICT (LD) & FLOODPLAIN OVERLAY DISTRICT |
| TAX MAP & LOT NUMBERS | 92-31                                                        |
| AREA OF LOT           | 1.92 AC                                                      |
| BUILDING COVERAGE     | 23% OR 18,986 SF                                             |

TAX MAP 92 LOT 31

**COVER SHEET**

**THE MUSE APARTMENTS**

**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**

PREPARED FOR

**THE MUSE LEBANON, LLC**

**SCALE: AS NOTED**

**AUGUST 12, 2024**



- Civil Engineers
- Structural Engineers
- Traffic Engineers
- Land Surveyors
- Landscape Architects
- Scientists

48 Constitution Drive  
Bedford, NH 03110  
Phone (603) 472-4488  
Fax (603) 472-9747  
[www.tfmoran.com](http://www.tfmoran.com)

|      |          |    |     |         |                        |      |
|------|----------|----|-----|---------|------------------------|------|
| FILE | 96202.01 | DR | JED | FB      | -                      | C-01 |
|      |          | CK | NG  | CADFILE | 96202-01 COVER-DETAILS |      |

**20 SPENCER STREET  
LEBANON, GRAFTON COUNTY, NH 03766  
LEBANON DOWNTOWN DISTRICT**

Aerial photograph showing a site location. A red dot labeled "SITE" in a red box points to a blue-outlined rectangular area. The area contains a tennis court and a small building. Surrounding features include a large parking lot, a baseball field, a golf course, and a highway interchange.

# ZONING PLAN

Legend:

- RL3 - RURAL LAND 3
- RL2 - RURAL LAND 2
- RL1 - RURAL LAND 1
- R1 - RESIDENTIAL 1
- R2 - RESIDENTIAL 2
- R3 - RESIDENTIAL 3
- RO - RESIDENTIAL OFFICE
- RO1 - RESIDENTIAL OFFICE 1
- GC - GENERAL COMMERCIAL
- GC1 - GENERAL COMMERCIAL 1
- CB - CENTRAL BUSINESS
- INL - INDUSTRIAL LIGHT
- INDH - INDUSTRIAL HIGH DENSITY
- MC - MEDICAL CENTER
- PB - PROFESSIONAL BUSINESS
- LD - LEBANON DOWNTOWN

HORIZONTAL SCALE 1" = 500'

Scale: 500 250 0 500

| DIMENSIONAL REQUIREMENTS                                                                          |                       |                                     |
|---------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|
|                                                                                                   | REQUIRED:             | PROVIDED:                           |
| MINIMUM LOT DIMENSIONS:<br>LOT AREA<br>LOT FRONTAGE                                               | 3,000 SF<br>40 FT     | 83,635.2 SF (1.92± AC)<br>451.39 FT |
| MINIMUM YARD DIMENSIONS:<br>FRONT*<br>SIDE*<br>REAR*<br>* EXCEPT AS REQUIRED PER<br>SECTION 307.7 | 0 FT<br>0 FT<br>10 FT | 20.3 FT<br>32.6 FT<br>83.3 FT       |
| MAXIMUM STRUCTURE DIMENSIONS:<br>STRUCTURE HEIGHT<br>STRUCTURE STORIES<br>BUILDING COVERAGE       | 55 FT<br>N/A<br>100%  | 46.6 FT<br>4 STORIES<br>23%         |

***OWNER'S SIGNATURE***

*THE PROPERTY WILL BE DEVELOPED IN ACCORDANCE WITH THIS PLAN AND THE ORDINANCES OF THE CITY OF LEBANON, NEW HAMPSHIRE.*

|                                  |             |
|----------------------------------|-------------|
| <hr/>                            | 8/12/2024   |
| <i>OWNER OR AUTHORIZED AGENT</i> | <i>DATE</i> |

***APPROVED BY THE CITY OF LEBANON PLANNING BOARD***

---

ON \_\_\_\_\_

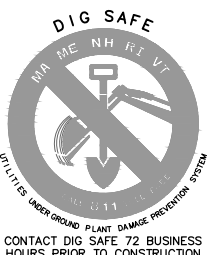
BOARD MEMBER \_\_\_\_\_ AND \_\_\_\_\_

BOARD MEMBER \_\_\_\_\_

|                                                                                                                                                                                                |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <h2 style="text-align: center;">VEHICLE AND BIKE PARKING</h2>                                                                                                                                  |  |
| <p>REQUIRED PARKING RATIO:<br/> MULTIFAMILY APARTMENTS: 1.5 SPACES/UNIT*<br/> TOTAL REQUIRED = 80 UNITS X 1.5 SPACES/UNITS = 120 SPACES*<br/> *OR AS OTHERWISE DETERMINED BY PARKING BOARD</p> |  |
| <p>EXISTING = 0<br/> PROVIDED = 87 SPACES ONSITE</p>                                                                                                                                           |  |
| <p>BIKECYCLE PARKING CALCULATIONS:<br/> LONG TERM = 30% X 80 UNITS = 24 SPACES<br/> SHORT TERM = 15% X 80 UNITS = 12 SPACES</p>                                                                |  |
| <p>EXISTING: 0<br/> PROVIDED:<br/> LONG TERM (INTERIOR) = 80 SPACES<br/> SHORT TERM (EXTERIOR) = 12 SPACES</p>                                                                                 |  |
| <p>LOADING SPACES<br/> EXISTING: 0<br/> PROVIDED: 0</p>                                                                                                                                        |  |
| <p>REQUIRED EV CHARGING RATIO:<br/> EVSE 5% = 5 SPACES<br/> EV CAPABLE 20% = 13 SPACES<br/> EV READY SPACES 65% = 39 SPACES<br/> TOTAL = 57</p>                                                |  |
| <p>PROVIDED:<br/> EVSE = 6 SPACES (2 ADA)<br/> EV CAPABLE SPACES = 19 SPACES<br/> EV READY SPACES = 33 SPACES<br/> TOTAL = 57</p>                                                              |  |

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.





LEGEND

**PROPOSED**

PROPERTY LINE

ZONING LINE

EASEMENT

SETBACK (STRUCTURE)

EDGE OF PAVEMENT

VERTICAL GRANITE CURB

INTEGRATED CONCRETE CURB

BITUMINOUS ASPHALT CURB

SAWCUT

BUILDING

BUILDING ROOF OVERHANG

BUILDING FOUNDATION

BUILDING ENTRANCE

OVERHEAD DOOR

TREE LINE

SILT SOCK

SOIL BOUNDARY

CONTOUR

SPOT GRADE

PARKING COUNT

STOP BAR

CROSSWALK

ACCESSIBLE PARKING SYMBOL

SIGN (SINGLE POST)

SIGN (MONUMENT)

BOLLARD

**PROPOSED**

CONCRETE

SNOW STORAGE

INLET PROTECTION

DRAIN LINE

STORMWATER MANAGEMENT SYSTEM

SEWER LINE

WATER LINE

GAS LINE

OVERHEAD UTILITY LINE

UNDERGROUND UTILITY LINE

CATCH BASIN

DRAIN MANHOLE

SEWER MANHOLE

DRAIN/SEWER/WATER PLUG OR CAP

HYDRANT

FIRE DEPARTMENT CONNECTION

WATER GATE VALVE

WATER SHUTOFF

GAS GATE VALVE

GAS SHUT OFF

GAS METER

TELEPHONE MANHOLE

ELECTRIC MANHOLE

ELECTRIC HANDHOLE

ELECTRIC PULL BOX

ELECTRIC METER

FLOOD LIGHT

LIGHT POLE

UTILITY POLE

GUY POLE

TEST PIT LOCATION

INFILTRATION TEST LOCATION

GENERAL NOTES

- THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-COMFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
- ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE OWNER.
- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF LEBANON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO CITY OF LEBANON DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE CITY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE CITY, COUNTY, AND/OR STATE AGENCY.
- ALL IN PAVEMENT MANHOLES SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
- WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
- REFER TO THE CITY STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
- THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
- SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
- SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
- CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
- PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
- SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
- TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
- ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
- REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABOUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
- IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
- IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
- PRIOR TO AN WORK BEING CONDUCTED A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE PLANNING STAFF AND OTHER CITY DEPARTMENTS AS NECESSARY TO REVIEW WORK PROPOSED AND A FINANCIAL GUARANTEE WILL BE IN PLACE.
- CONTRACTOR'S GENERAL RESPONSIBILITIES:
  - BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND CITY OF NASHUA CONSTRUCTION STANDARDS, LATEST ADDITION.
  - NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
  - EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
  - TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL ORDINANCES AND REGULATIONS OF THE CITY OF NASHUA, NEW HAMPSHIRE.
  - MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
  - IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
  - COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
  - PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
  - WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
  - VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
  - PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE OWNER.
  - IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
  - AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

GRADING NOTES

- THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
- THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE.
- COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
- COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
- COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
- LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
- THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
- THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
- ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 7" REVEAL UNLESS OTHERWISE NOTED.
- ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 7" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
- THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
- ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
- ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
- STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
- DENSITY REQUIREMENTS:

|                  |                                                   |
|------------------|---------------------------------------------------|
| MINIMUM DENSITY* | LOCATION                                          |
| 95%              | BELOW PAVED OR CONCRETE AREAS                     |
| 95%              | TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL |
| 85%              | BELOW LOAM AND SEED AREAS                         |

\*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.
- FUTURE BUILDING CONSTRUCTION SHALL INCORPORATE FOUNDATION DRAINAGE SYSTEMS EXCEPT WHERE AN INVESTIGATION ESTABLISHES THAT SPECIFIC BUILDING SITES ARE LOCATED IN WELL DRAINED SOILS AND THAT SUCH SYSTEMS ARE NOT REQUIRED.

SITE PREPARATION NOTES

- THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
- THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
- EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
- ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
- CONTRACTOR TO LIMIT AREA OF DISTURBANCE TO NO MORE THAN 5 ACRES AT ONE TIME DURING CONSTRUCTION.
- CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF NASHUA'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND THE CITY STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
- THE CONTRACTOR SHALL REQUEST A PRECONSTRUCTION MEETING WITH THE CITY TO DISCUSS SITE INSPECTIONS, SCHEDULES, SPECIAL CONDITIONS, ETC.

UTILITY NOTES

- LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
- ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
- COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
- ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
- SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
- ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF LEBANON STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704-08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
- THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
- ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
- THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
- PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
- UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
- THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

|           |                             |
|-----------|-----------------------------|
| DRAINAGE  | PRIVATE/MUNICIPAL           |
| SEWER     | MUNICIPAL                   |
| WATER     | MUNICIPAL                   |
| GAS       | NOT AVAILABLE               |
| ELECTRIC  | LIBERTY UTILITIES           |
| TELEPHONE | CONSOLIDATED COMMUNICATIONS |
| CABLE     | CONSOLIDATED COMMUNICATIONS |

**SITE DEVELOPMENT PLANS**

TAX MAP 92 LOT 31

**NOTES & LEGEND**

**THE MUSE APARTMENTS**

**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**

PREPARED FOR

**THE MUSE LEBANON, LLC**

**SCALE: NOT TO SCALE**

**AUGUST 12, 2024**

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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**GENERAL**

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.
2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.

3. LOAM SHALL CONSIST OF LOOSE FRABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.6. LOAM SHALL CONTAIN A MINIMUM OF THREE PERCENT (3%) AND A MAXIMUM OF TWENTY PERCENT (20%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A # 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.
4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.
5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.
6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.
7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

1. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED, BUT NOT LESS THAN THE FOLLOWING PERIODS:

- A. SEEDED LAWNS: 60 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
    1. WHEN FULL MAINTENANCE PERIOD HAS NOT ELAPSED BEFORE END OF PLANTING SEASON, OR IF LAWN IS NOT FULLY ESTABLISHED, CONTINUE MAINTENANCE DURING NEXT PLANTING SEASON.
  - B. SODDED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
  - C. PLUGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
  - D. SPRIGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
2. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS TO PREVENT EROSION, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
- A. IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW MULCH. ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.
3. WATERING: PROVIDE AND MAINTAIN TEMPORARY PIPING, HOSES, AND LAWN-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND KEEP LAWN UNIFORMLY MOIST TO A DEPTH OF FOUR INCHES (100 mm).
- A. SCHEDULE WATERING TO PREVENT WEEDING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM TO AVOID WALKING OVER MUDDY OR NEWLY PLANTED AREAS.
  - B. WATER LAWN AT A MINIMUM RATE OF ONE INCH (25 mm) PER WEEK.
4. MOW LAWN AS SOON AS TALL GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIC HEIGHT WITHOUT CUTTING MORE THAN 40 PERCENT OF GRASS HEIGHT. REMOVE NO MORE THAN 40 PERCENT OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWINGS TO MAINTAIN THE FOLLOWING GRASS HEIGHT:
- A. MOW GRASS TO  $\frac{1}{2}$  INCH (13 mm) HIGH OR LESS.
  - B. MOW GRASS  $\frac{3}{8}$  TO 1 INCH (13 TO 25 mm) HIGH OR LESS.
  - C. MOW GRASS  $\frac{1}{2}$  TO 2 INCHES (25 TO 50 mm) HIGH OR LESS.
  - D. MOW GRASS  $1\frac{1}{2}$  TO 2 INCHES (38 TO 50 mm) HIGH OR LESS.
  - E. MOW GRASS 2 TO 3 INCHES (50 TO 75 mm) HIGH OR LESS.
5. LAWN POSTFERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY.
- A. USE FERTILIZER THAT WILL PROVIDE ADEQUATE NITROGEN OF AT LEAST 1 lb/1,000 SF (0.45 kg/92.9 SM) TO LAWN AREA.

1. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE MEADOW IS ESTABLISHED, BUT FOR NOT LESS THAN 40 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.

2. MAINTAIN AND ESTABLISH MEADOW BY WATERING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH.
3. CONVEY: PROVIDE AND MAINTAIN TEMPORARY PIPING, HOSES, AND LAWN-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND KEEP MEADOW UNIFORMLY MOIST.
  - A. SCHEDULE WATERING TO PREVENT WILTING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM TO AVOID WALKING OVER MUDDY OR NEWLY PLANTED AREAS.
  - B. WATER LAWN AT A MINIMUM RATE OF 1/2 INCH (13 mm) PER WEEK FOR 4 WEEKS.

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1. PRUNING SHOULD BE PERFORMED EARLY AND KEPT UP AT REGULAR INTERVALS. TREES SHOULD BE PRUNED AND SHAPED TO AVOID SPLITTING LATER IN LIFE. BROKEN TOPS AND BRANCHES SHOULD BE REMOVED AS SOON AS POSSIBLE AFTER INJURY. BROKEN, WEAK OR DISEASED BRANCHES SHOULD BE REMOVED FIRST, DEAD BRANCHES SECOND AND HEALTHY BRANCHES LAST.
2. TREES AND SHRUBS SHOULD BE PROTECTED AGAINST DAMAGE INCURRED WITH LAWN MOWERS AND GARDEN EQUIPMENT. KEEPING GRASS AWAY FROM TREE TRUNKS WITH THE USE OF MULCH IS RECOMMENDED.
3. THE USE OF ROAD SALT AROUND TREES AND SHRUBS SHOULD BE AVOIDED OR MINIMIZED.
4. LANDSCAPED AREAS SHALL BE ROUTINELY MAINTAINED FREE OF DEBRIS AND LITTER. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. MAINTENANCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.
2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEED OR SODED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE

|                         |                    |
|-------------------------|--------------------|
| 33% CREEPING RED FESCUE | (MIN. 45 LBS/ACRE) |
| 42% PERENNIAL RYEGRASS  | (MIN. 55 LBS/ACRE) |
| 21% KENTUCKY BLUEGRASS  | (MIN. 30 LBS/ACRE) |
| 4% REDTOP               | (MIN. 5 LBS/ACRE)  |

NEW ENGLAND CONSERVATION WILDLIFE MIX FROM NEW ENGLAND WETLAND PLANTS, INC. OR  
APPROVED EQUAL. (SEE LANDSCAPE SHEETS)

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.

2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE PROCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.
3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.
4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.
5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6" DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2" BEYOND THE OUTER MOST BRANCHES.
6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"-2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJUST FINISH GRADES AS DIRECTED IN THE FIELD.
7. STAKE AND GUY TREES IMMEDIATELY AFTER PLANTING (TREE SUPPORT STAKES SHALL BE 2" X 3" X 8'0", WOOD STAKES, GUYING WIRE SHALL BE NO. 12 GAUGE GALVANIZED SOFT STEEL WIRE. HOSE FOR COVERING WIRE SHALL BE NEW OR USED TWO PLY RUBBER HOSE NOT LESS THAN 1/2 INCH INSIDE DIAMETER. (PLASTIC "CINCH-TIES" OR EQUIVALENT FASTENING DEVICE MAY BE AN ACCEPTABLE GUY WIRE AND HOSE PROTECTOR SUBSTITUTE.)
8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.
9. TREES TO REMAIN STAKED FOR 1 FULL GROWING SEASON.
10. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
3. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, SWALES, AND BASINS PRIOR TO ANY ROUGH GRADING.
4. ROUGH GRADE SITE OR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
5. AN AREA SHALL BE CONSIDERED STABILIZED IF:
  - A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
  - D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
6. CONSTRUCT CULVERTS, DETENTION BASINS AND TREATMENT SWALES, PLACE HEADWALLS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS/BASINS PRIOR TO DIRECTING FLOW TO THEM.
7. INSTALL ALL UNDERGROUND UTILITIES.
8. CONSTRUCT BUILDINGS.
9. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
10. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND IMMEDIATELY AFTER 0.5" OF RAINFALL.
11. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
12. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
13. IN THAT THE PROJECT WILL DISTURB MORE THAN 5-ACRES AT ONE TIME A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
  - A. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING THE 1/2 INCH OR GREATER RAIN EVENT (I.E. 1/2 INCH OF PRECIPITATION OR MORE WITHIN 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
  - B. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
  - C. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (TO BETHANH MCCARTHY AT: BETHANH.M.MCCARTHY@DES.NH.GOV).
14. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION

1. ALL IN PAVEMENT MANHOLES SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
2. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
3. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
5. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
6. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDAS STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
7. REFER TO THE CITY STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
8. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
9. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WATER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH SHALL BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15 OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15 OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.

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| 1    | 8/26/2024 | CITY REVIEW |  | JD | NG |
| REV. | DATE      | DESCRIPTION |  | DR | CK |

DURING CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN NO LONGER NEEDED. COVER OF GREATER THAN 85% EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:

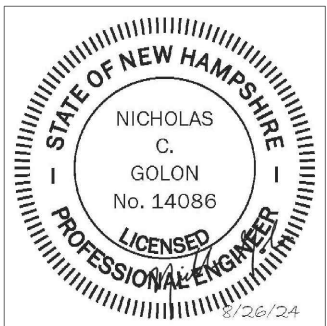
|                         |                    |
|-------------------------|--------------------|
| 33% CREEPING RED FESCUE | (MIN. 45 LBS/ACRE) |
| 42% PERENNIAL RYEGRASS  | (MIN. 55 LBS/ACRE) |
| 21% KENTUCKY BLUEGRASS  | (MIN. 30 LBS/ACRE) |
| 4% REDTOP               | (MIN. 5 LBS/ACRE)  |

NEW ENGLAND CONSERVATION WILDLIFE MIX FROM NE  
EQUAL. (SEE LANDSCAPE SHEETS)

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)  
100% ANNUAL RYE

- a. PLACING LOAM ON SITE
- a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
- b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
- c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.
- b. SEED BED PREPARATION
- a. AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDDED SHALL BE LOOSENEED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE Laid IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
9. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
10. SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
12. UPON STABILIZATION OF UPSTREAM DISTURBED AREAS, CONTRACTOR SHALL REMOVE TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.



## TAX MAP 92 LOT 31

## NOTES

## THE MUSE APARTMENTS

**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**

PREPARED FOR

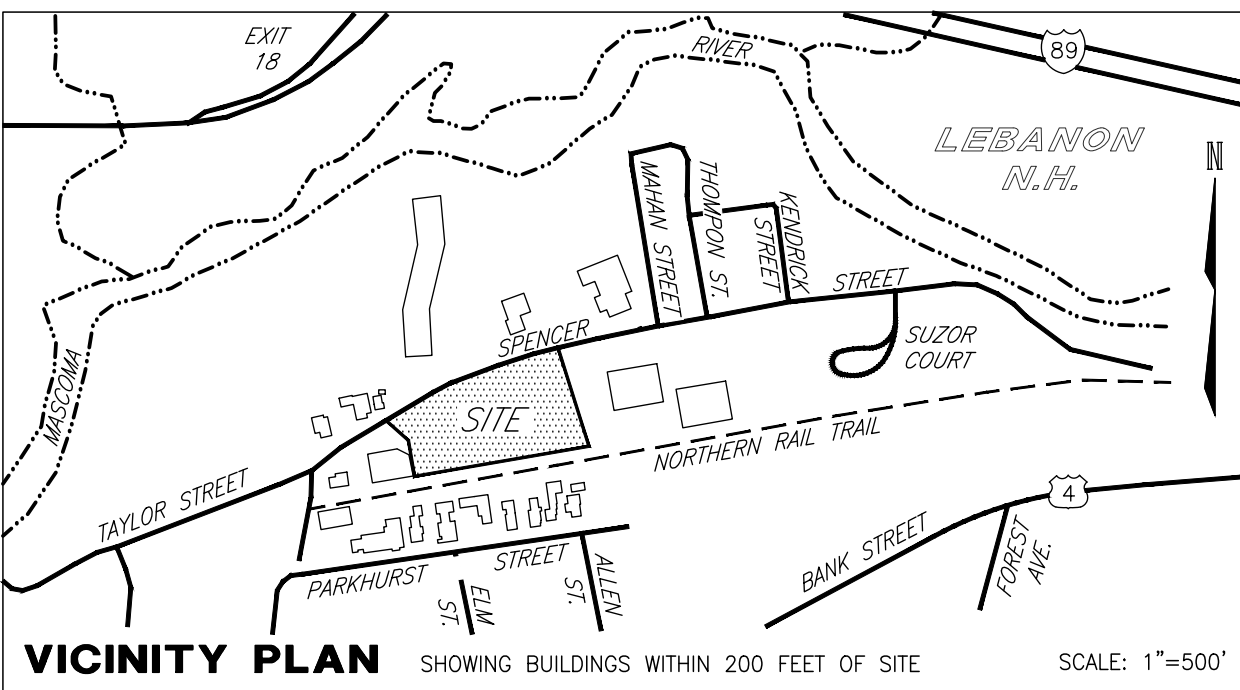
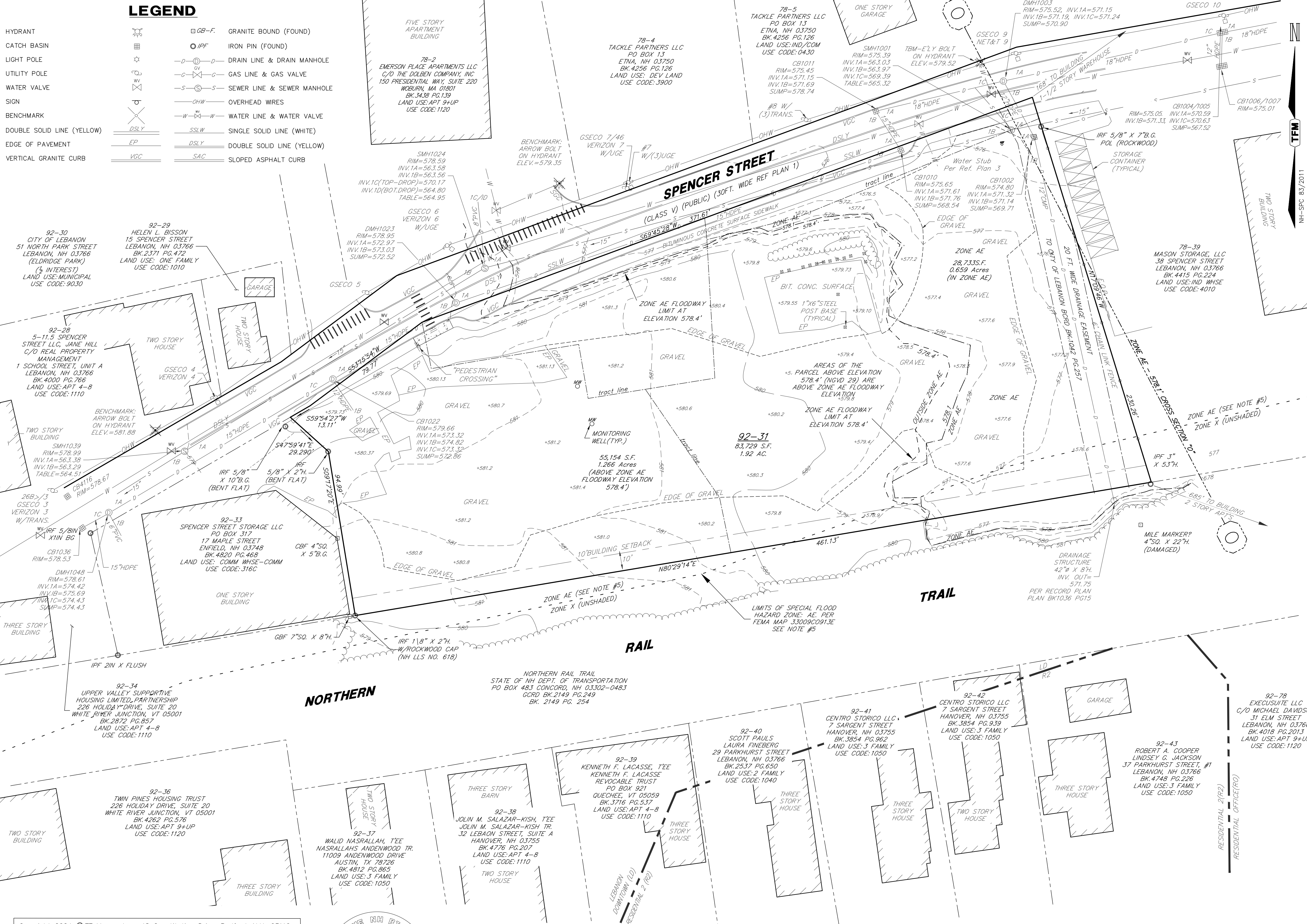
**THE MUSE LEBANON, LLC**

**SCALE: NOT TO SCALE**

**AUGUST 12, 2024**

|                                                                                       |                                                                                                                      |  |                                                                                                                                                  |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Civil Engineers<br>Structural Engineers<br>Traffic Engineers<br>Land Surveyors<br>Landscape Architects<br>Scientists |  | 48 Constitution Drive<br>Bedford, NH 03110<br>Phone (603) 472-4488<br>Fax (603) 472-9747<br><a href="http://www.tfmoran.com">www.tfmoran.com</a> |
|                                                                                       | Filing Date: 96202.01<br>Drawn by: DR CK<br>Designated by: JED NG<br>By: FB CADFILE<br>Title: 96202-01 COVER-DETAILS |  | C-03                                                                                                                                             |



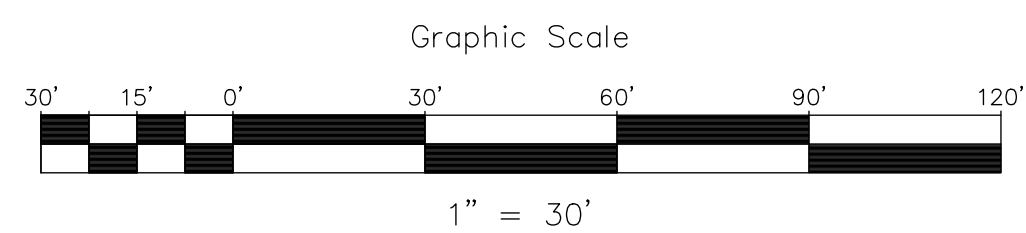


## REFERENCE PLANS

- LOT LINE ADJUSTMENT PLAT, CITY OF LEBANON AND KEITH BEARDSLEE, 10 & 20 SPENCER STREET, LEBANON, NEW HAMPSHIRE, SCALE: 1"=40', DATED: OCTOBER 4, 2018, PREPARED: BY ROCKWOOD LAND SERVICES, LLC. G.C.R.D. PLAN NO. 15652.
- ALTA/ACSM LAND TITLE SURVEY IN LEBANON, GRAFTON COUNTY, NEW HAMPSHIRE PREPARED FOR: EMERSON GARDENS LTD. PARTNERSHIP, SCALE: 1"=40', DATED: JUNE 6, 2003, PREPARED: BY BRUNO ASSOCIATES, INC., P.C. G.C.R.D. PLAN NO. 11131.
- SPENCER STREET IMPROVEMENTS-CONSTRUCTION PLANS, AS-BUILTS, PREPARED FOR THE CITY OF LEBANON, N.H. BY B.E.T.A. INC. DATED: NOVEMBER 21, 2023. FILED AT THE CITY OF LEBANON ENGINEERING DEPARTMENT.

## NOTES

- OWNER OF RECORD: CITY OF LEBANON  
51 NORTH PARK STREET  
LEBANON, NH 03766  
DEED REFERENCE: BK. 604 PG. 369; BK. 1064 PG. 371; BK. 1725 PG. 936.  
AREA: 83,729 S.F. OR 1.92 ACRES. (PER REFERENCE PLAN NO. 1)
- 92-31 INDICATES TAX MAP AND LOT NUMBER.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT ON TAX MAP 92, LOT 31 LOCATED AT 20 SPENCER STREET IN LEBANON, NH, AS SHOWN HEREON AND NO OTHER PURPOSE.
- CURRENT ZONING: LEBANON DOWNTOWN (LD)  
MINIMUM LOT SIZE: 3,000 S.F.  
MINIMUM LOT FRONTAGE: 40 FEET (MAY BE REDUCED BY CONDITIONAL USE PERMIT PER SECTION 302.4)  
MINIMUM BUILDING SETBACKS:  
FRONT: NONE (EXCEPT AS MAY BE REQUIRED PER SECTION 307.7)  
SIDE: NONE (EXCEPT AS MAY BE REQUIRED PER SECTION 307.7)  
REAR: 10 FEET (EXCEPT AS REQUIRED PER SECTION 307.7)  
MAXIMUM BUILDING COVERAGE: NONE  
MAXIMUM BUILDING HEIGHT: 55 FEET (EXCEPT AS MAY BE PERMITTED BY CONDITIONAL USE PERMIT PER SECTION 307.8)  
THE SUBJECT PARCEL IS LOCATED WITHIN THE FLOOD PLAIN OVERLAY DISTRICT.
- EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR GRAFTON COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 33009C0913E, EFFECTIVE DATE: FEBRUARY 20, 2008, INDICATES THAT A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA: ZONE AE, (1% ANNUAL CHANCE OF FLOODING). FLOOD ZONE AE IS SHOWN TO BE AT ELEVATION 578.1' (NGVD 29) WITH THE ZONE AE FLOODWAY AT ELEVATION 578.4'. SEE CROSS SECTION "0" IN THE FIS. THE MAP CITED ABOVE SHOWS THE ENTIRE PARCEL LYING WITH ZONE AE, HOWEVER, A DETAILED FIELD SURVEY INDICATES THAT THE MAJORITY OF THE PARCEL LIES ABOVE THE 578.1' AND THE 578.4' ELEVATION.
- HORIZONTAL DATUM: NAD83(2011). VERTICAL DATUM: NGVD29. BENCHMARK USED: STATION E 49 X 1978 (253-430) (NGS PID 001079) VIA DIFFERENTIAL LEVELING TECHNIQUES. BENCHMARK SET: AS SHOWN
- EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE GRAFTON COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. IF MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
- THE PROPERTY IS SUBJECT TO GROUNDWATER MANAGEMENT PERMIT NO. 198806030-L-001 AS RECORDED IN THE GRAFTON COUNTY REGISTRY OF DEEDS, BK. 2945 PG. 225.



TAX MAP 92 LOT 31  
**EXISTING CONDITIONS PLAN**  
**20 SPENCER STREET**  
**LEBANON, NEW HAMPSHIRE**  
OWNED BY:  
**CITY OF LEBANON, NH**  
PREPARED FOR:  
**BROOKLINE OPPORTUNITIES, LLC**  
**C/O TAMPOSI BROTHER HOLDINGS**

SCALE: 1" = 30'

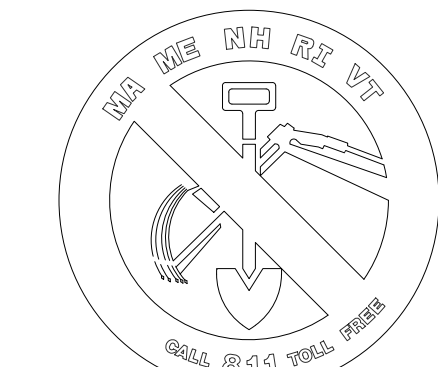
AUGUST 09, 2024

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**DIGSAFE**  
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

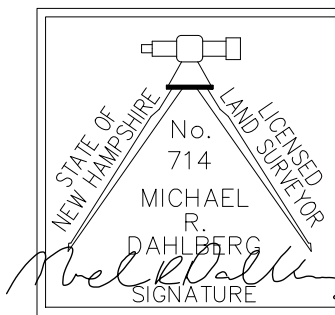
## SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE AND HAS AN ERROR OF CLOSURE OF GREATER ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18-II)

Michael D. Moran  
LICENSED LAND SURVEYOR

AUGUST 09, 2024  
DATE



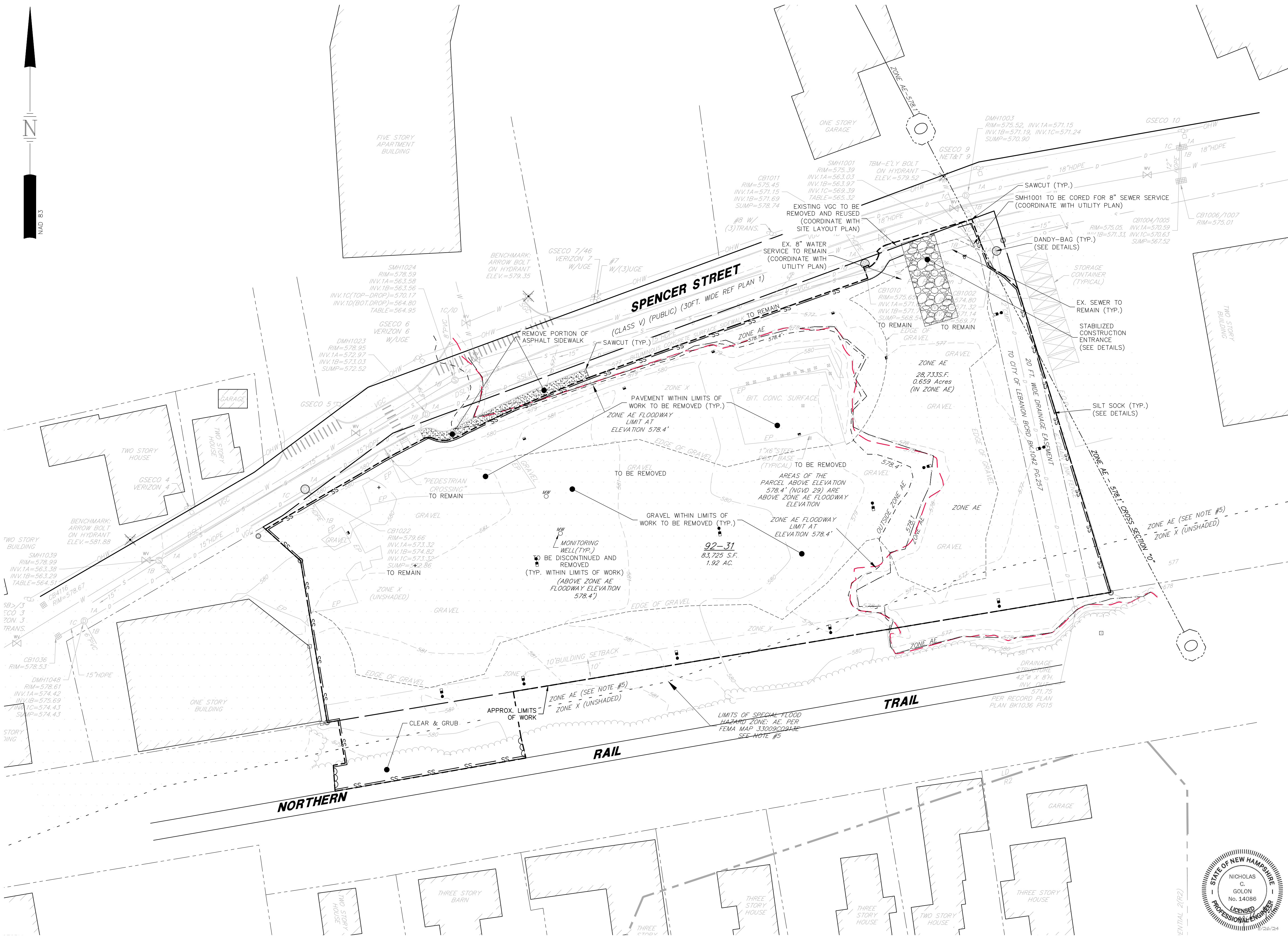


Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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| FILE | 96202.00 | DR | TNB | FB      | 2227            | SHEET 1 OF 1 |
|      |          | CK | MRD | CADFILE | 96202-00 Survey |              |





## NOTES

- SEE SITE PREPARATION AND CONSTRUCTION SEQUENCE NOTES ON SHEET C-02.
- THIS PARCEL IS SUBJECT TO GROUNDWATER MANAGEMENT PERMIT NO. 198806030-L-001. ONGOING MONITORING AND REPORTING SHALL CONTINUE ACCORDING TO THE PERMIT IN CONJUNCTION WITH THIS PLAN.

## SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

| SYMBOL | DESCRIPTION                      | HYDROLOGIC SOIL GROUP |
|--------|----------------------------------|-----------------------|
| 299    | UDORTHENTS, SMOOTHED             | N/A                   |
| 26A    | WINDSOR LOAMY SAND, 0-3% SLOPES  | A                     |
| 132A   | DARTMOUTH SILT LOAM, 0-3% SLOPES | C                     |
| 4      | POOTATUCK VERY FINE SANDY LOAM   | B                     |

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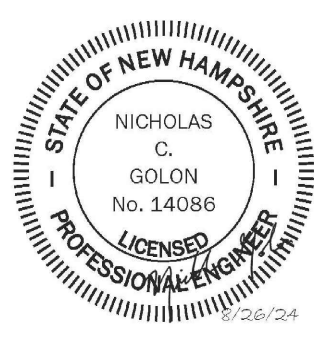
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HORIZONTAL SCALE 1"=30'

30 15 0 30



## SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31  
**SITE PREPARATION AND DEMOLITION PLAN**  
**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**

OWNED BY  
**CITY OF LEBANON**  
PREPARED FOR  
**THE MUSE LEBANON, LLC**

SCALE: 1"=30'

AUGUST 12, 2024



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

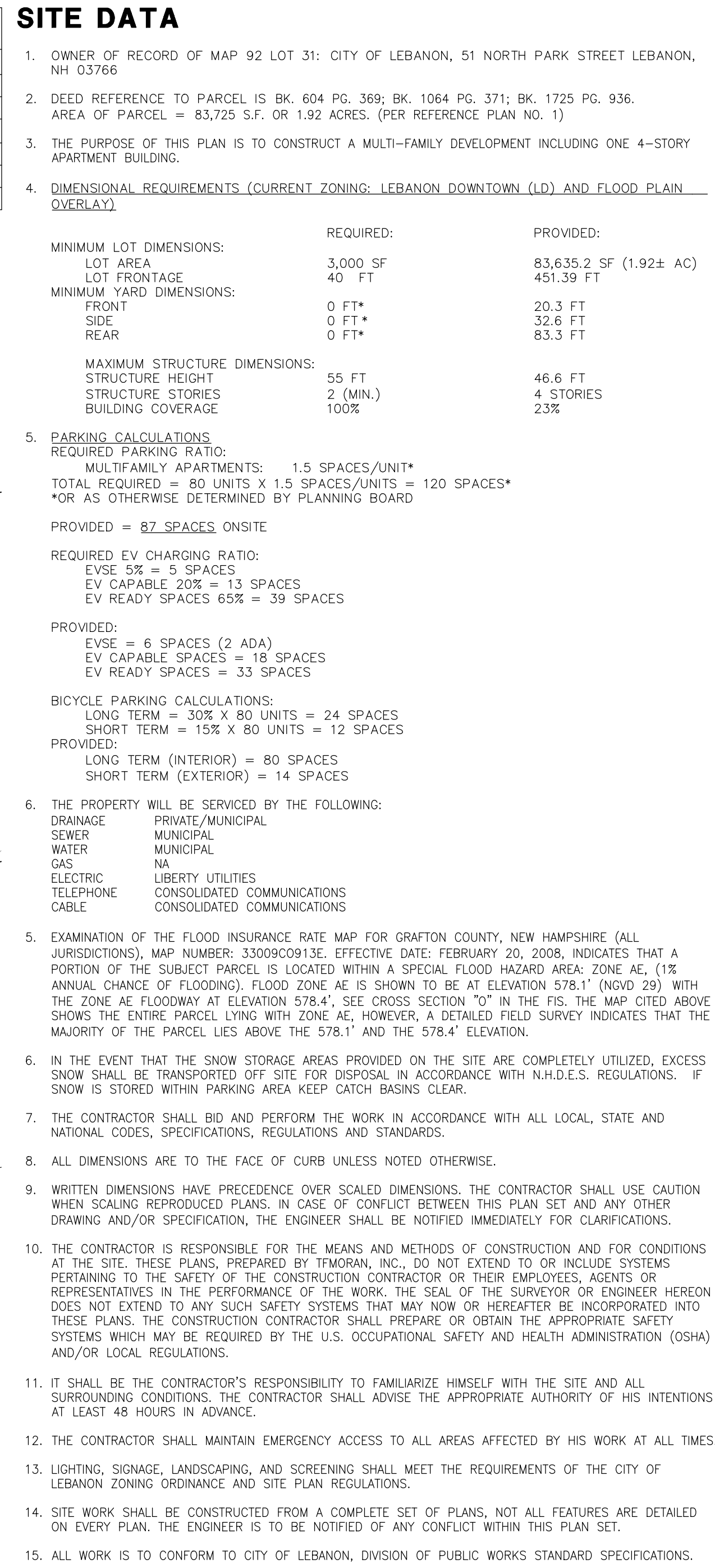
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| CK       |          | NG | CADFILE |    | C-04 SITE PREP |  |  |  |  |
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C-04



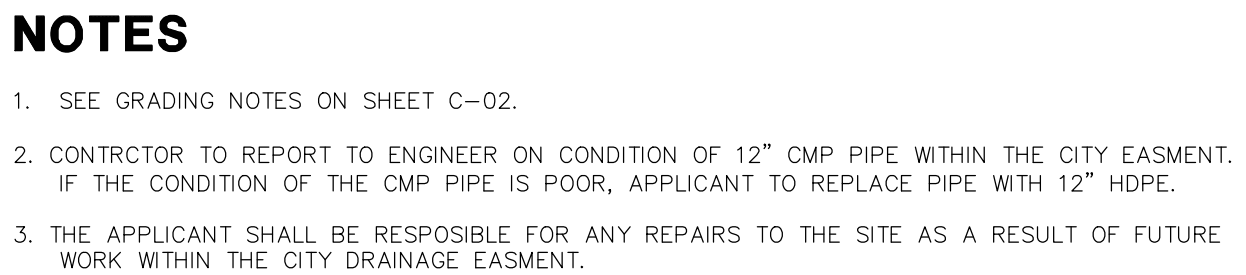


TAX MAP 92 LOT 31  
**SITE LAYOUT PLAN**  
**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**

**AUGUST 12, 2024**

|                                                                                       |  |          |           |                                                                                                                      |                                |                                                                                                                                                |      |
|---------------------------------------------------------------------------------------|--|----------|-----------|----------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------|
|  |  |          |           | Civil Engineers<br>Structural Engineers<br>Traffic Engineers<br>Land Surveyors<br>Landscape Architects<br>Scientists |                                | 48 Constitution Drive<br>Bedford, NH 03110<br>Phone (603) 472-4488<br>Fax (603) 472-9747<br><a href="http://www.tfmnor.com">www.tfmnor.com</a> |      |
| F 96202.01                                                                            |  | DR<br>CK | JED<br>NG | FB<br>CADFILE                                                                                                        | —<br><u>C-05 - SITE LAYOUT</u> |                                                                                                                                                | C-05 |





**SITE DEVELOPMENT PLANS**

TAX MAP 92 LOT 31

**GRADING AND DRAINAGE**

**THE MUSE APARTMENTS**

**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**

PREPARED FOR

**THE MUSE LEBANON, LLC**

**SCALE: 1"=30'**

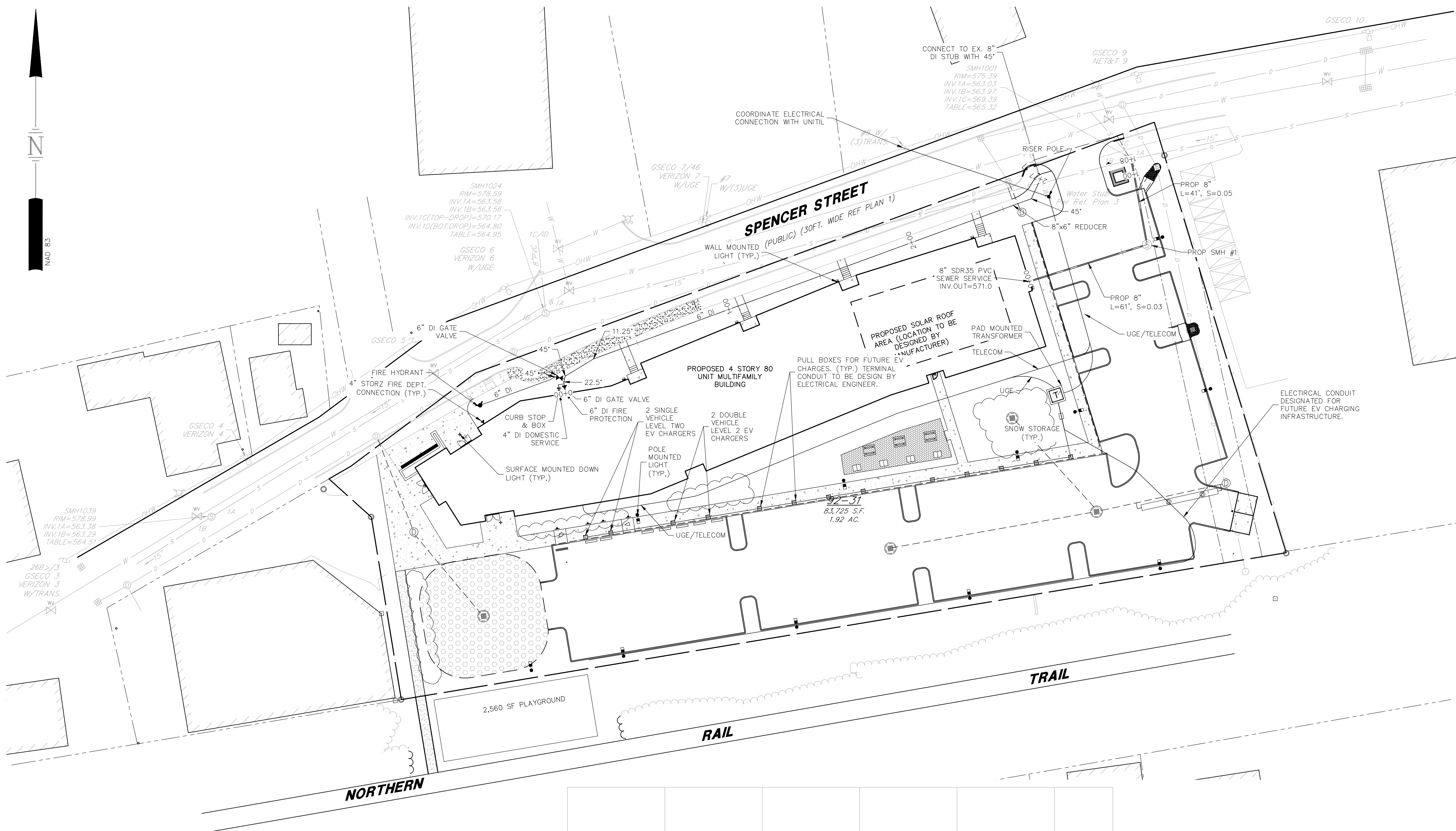
**AUGUST 12, 2024**

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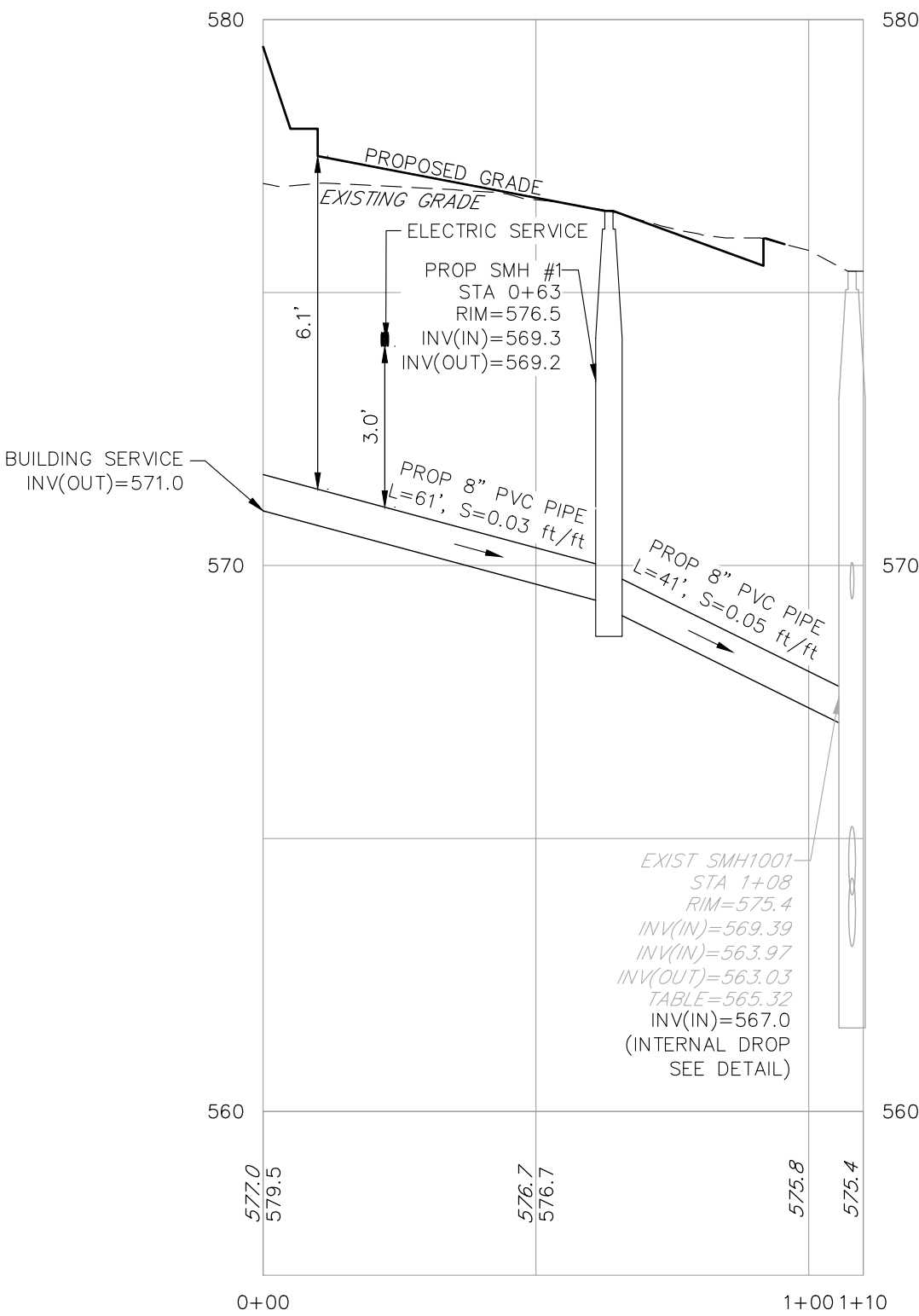




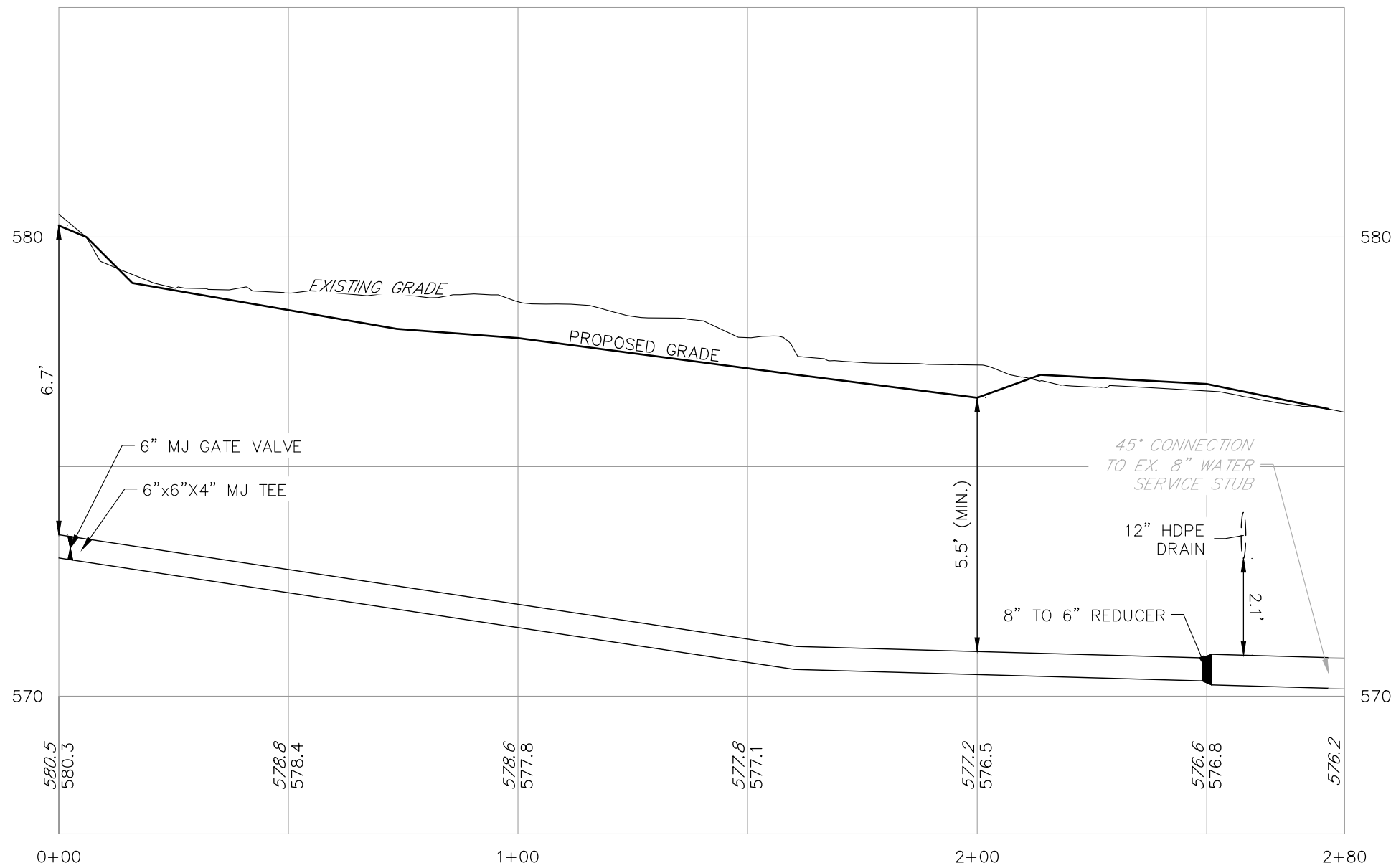




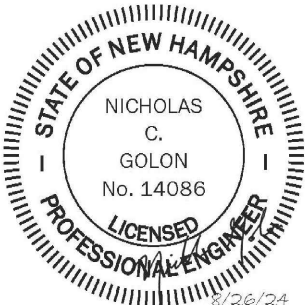
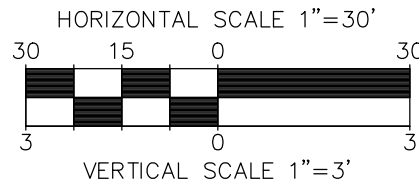
- NOTES**
- SEE NOTES ON SHEET C-01.
  - SEE SEWER PLAN AND PROFILE ON SHEET C-07
  - ELECTRIC VEHICLE CHARGING STATION INFRASTRUCTURE SHOWN FOR COORDINATION PURPOSES . FINAL DESIGN SAHLL BE COMPLETED BY A NH LICENSED ELECTRICAL ENGINEER.



**SEWER SERVICE PROFILE**  
SCALE: 1"=30' H/1"=3' V



**WATER SERVICE PROFILE**  
SCALE: 1"=30' H/1"=3' V



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**SITE DEVELOPMENT PLANS**

TAX MAP 92 LOT 31

**UTILITY PLAN**

**THE MUSE APARTMENTS**

**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**

PREPARED FOR

**THE MUSE LEBANON, LLC**

**SCALE: 1"=30' H/1"=3' V**

**AUGUST 12, 2024**

**TFM**

Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
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| 1    | 8/26/2024 | CITY REVIEW | JD | NG |
| REV. | DATE      | DESCRIPTION | DR | CK |

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| 96202.01 | DR | JED     | FB                  | -    |
| CK       | NG | CADFILE | 96202-01 PRODUCTION | C-08 |





1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AS PART OF THE CGP. STORMWATER MANAGEMENT INTENT (NOMI) MUST BE SUBMITTED TO EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOMI MUST BE SUBMITTED TO STORM WATER INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.
2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE (EXHAUSTS, ETC.), ETC. FOR MORE INFORMATION, CONTACT THE REGIONAL OFFICE AT 202-554-9545, OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABNEY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-618-1841.

3. TOTAL SITE AREA: 1.92 AC  
TOTAL AREA OF DISTURBANCE: 1.9± AC (INCLUDING OFF-SITE AREAS)
4. SOILS SHOWN ARE FROM THE SOIL SURVEY OF GRAFTON COUNTY, NH,  
PREPARED BY USDA-NATURAL RESOURCES CONSERVATION SERVICES.  
299 –UDORTHENTS – HYDROLOGICAL SOIL GROUP (ASSUMED A)  
26A – WINDSOR LOAM SAND – HYDROLOGICAL SOIL GROUP C  
132A – DARTMOUTH SILT LOAM – HYDROLOGICAL SOIL GROUP C  
4 – POOTATUCK VERY FINE SANDY LOAM – HYDROLOGICAL SOIL GROUP B
5. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN FOR RM,  
INVERT, PIPE LENGTH, AND SLOPE INFORMATION.  
POST-CONSTRUCTION RUNOFF CN: QN=84  
IMPERVIOUS SURFACE AREA: 1.4± AC

TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.5 LBS PER 1,000 SQ. FT. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 5 TONS PER ACRE OF GROUND CRYSTALLINE SILICA. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 SQ FT TALL FESCUE, 0.20 LBS/1,000 SQ FT CREEPING RED FESCUE, AND 0.20 LBS/1,000 SQ FT BIRDSFOOT TREFOIL. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

SILT SOCK - WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

SILT FENCE - WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE - WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEEPED ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPULIN.

CATCH BASINS - WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION - WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION - SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

## 8. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. APPROXIMATELY 0.02 ACRES OF THE 1.9 ACRE SITE WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. WHEN CONSTRUCTION IS COMPLETE THE MAJORITY OF THE SITE WILL DRAIN TO THE MUNICIPAL CLOSED DRAINAGE SYSTEM IN SPENCER STREET. DEEP SUMP CATCH BASINS HAVE BEEN PROVIDED FOR PRETREATMENT.

9. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

10. THRUST BLOCK SHALL BE PROVIDED WHERE WATER LINE CHANGES DIRECTION OR TAPS INTO EXISTING WATER LINE.

11. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE RCRA SHALL TAKE THE FOLLOWING STEPS:
  - NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., — CALL (202) 426-2675.
  - WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
  - MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:  
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT:

- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS; AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONCERNANCES AND DRAINS.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:  
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:  
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

PETROLEUM PRODUCTS:  
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:  
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:  
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:  
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

**SPILL CONTROL PRACTICES:**

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA UNLESS, EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO: BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER OCCURRENCE.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A SPECIFIC PHASE OF PREVENTION AND CLEANUP. THE NAME OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON-SITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.

TAX MAP 92 LOT 31  
**STORMWATER MANAGEMENT PLAN**  
**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**

OWNED BY  
**CITY OF LEBANON**  
PREPARED FOR  
**E MUSE LEBANON,**

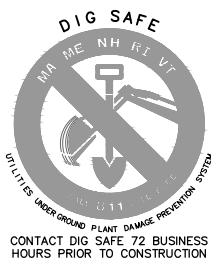
**SCALE: 1"=40'**

**AUGUST 12, 2024**

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HORIZONTAL SCALE 1"=40'

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| <i>REV.</i> | <i>DATE</i> | <i>DESCRIPTION</i> |  | <i>DR</i> | <i>CK</i> |



- Civil Engineers
- Structural Engineers
- Traffic Engineers
- Land Surveyors
- Landscape Architects
- Scientists

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(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) (FORMERLY THE AMERICAN ASSOCIATION OF NURSERMEN) IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1-1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258-FN."

GUARANTEE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

| SYMBOL                                                                                | QTY. | BOTANICAL NAME<br>COMMON NAME                                        | SIZE                 | REMARKS |
|---------------------------------------------------------------------------------------|------|----------------------------------------------------------------------|----------------------|---------|
|    | 15   | ACER RUBRUM 'OCTOBER GLORY'<br>OCTOBER GLORY RED MAPLE               | 2 1/2" TO 3"<br>CAL. | B&B     |
|    | 6    | PLATANUS X ACREFOLIA 'BLOODGOOD'<br>BLOODGOOD LONDON PLANETREE       | 2 1/2" TO 3"<br>CAL. | B&B     |
|    | 8    | ULMUS AMERICANA 'PRINCETON'<br>PRINCETON AMERICAN ELM                | 2 1/2" TO 3"<br>CAL. | B&B     |
|    | 9    | ACER FREEMANI 'ARMSTRONG GOLD'<br>ARMSTRONG GOLD MAPLE               | 2 1/2" TO 3"<br>CAL. | B&B     |
|    | 7    | AMELANCHIER CANADENSIS<br>SERVICEBERRY                               | 2 1/2" TO 3"<br>CAL. | B&B     |
|    | 21   | CALAMAGROSTIS A. 'KARL FORESTER'<br>KARL FORESTER FEATHER REED GRASS | 2 GAL.               | CONT.   |
|    | 10   | FORSYTHIA 'LYNWOOD GOLD'<br>LYNWOOD GOLD FORSYTHIA                   | 3' TO 4'             | CONT.   |
|    | 23   | JUNIPERUS C. 'SEAGREEN'<br>SEAGREEN JUNIPER                          | 24" TO 30"           | CONT.   |
|    | 44   | HYDRANGEA 'ENDLESS SUMMER'<br>ENDLESS SUMMER HYDRANGEA               | 24" TO 30"           | CONT.   |
|    | 14   | HYDRANGEA P. 'BOMBSHELL'<br>BOMBSHELL PANICLE HYDRANGEA              | 24" TO 30"           | CONT.   |
|    | 9    | VBURNUM DENTATUM<br>ARROWWOOD VIBURNUM                               | 3' TO 4'             | CONT.   |
|    | 8    | THUJA O. 'SMARAGD'<br>EMERALD GREEN ARBORVITAE                       | 4 TO 5'              | CONT.   |
|    | 36   | JUNIPERUS C. 'PFITZER COMPACTA'<br>COMPACT PFITZER JUNIPER           | 24" TO 30"           | CONT.   |
|    | 8    | CORNUS ALBA 'ARGENTE-O-MARGINATA'<br>VARIEGATED RED TWIG DOGWOOD     | 24" TO 30"           | CONT.   |
|    | 38   | PANICUM VIRGATUM 'CAPE BREEZE'<br>CAPE BREEZE SWITCH GRASS           | 3 GAL.               | CONT.   |
|  | 8    | HEMEROCALLIS FULVA<br>ORANGE DAYLILY                                 | 1 GAL.               | CONT.   |

MINIMUM LANDSCAPE AREA (SEC. 6.2.B.1.a.):

REQUIRED REAR AREA: 10'  
PROVIDED: 5' \*WAIVER REQUIRED

PERIMETER LANDSCAPE STRIPS (SEC. 6.2.B.2.):

1 TREE + MIX OF SHRUBS/UNDERSTORY TREES TOTALING AT LEAST 5 PLANTS/600 SF

FRONT LANDSCAPE STRIP:

TREES (4,200 SF/600 SF) = 7 TREES REQUIRED  
7 TREES PROVIDED

SHRUBS (4,200 SF/600 SF) = 28 SHRUBS REQUIRED  
66 SHRUBS PROVIDED

SIDE LANDSCAPE STRIPS:

TREES (2,906 SF/600 SF) = 4.8 OR 5 TREES REQUIRED  
7 TREES PROVIDED

SHRUBS (2,906 SF/600 SF) = 20 SHRUBS REQUIRED  
23 SHRUBS PROVIDED

REAR LANDSCAPE STRIP:

TREES (4,550 SF/600 SF X 5) = 7.5 OR 8 TREES REQUIRED  
10 TREES PROVIDED

SHRUBS (4,550 SF/600 SF X 5) = 3.2 SHRUBS REQUIRED  
33 SHRUBS PROVIDED

PLANTED TREES (SEC. 6.2.B.4.): TREES SHALL BE NO CLOSER THAN 8 FEET TO ANY PROPERTY LINE.

REQUIRED: 8'  
PROVIDED: 2' (REAR) \*WAIVER REQUIRED

FLOWERING DECIDUOUS SHRUBS (SEC. 6.2.B.5.): SHALL MAKE UP 50-70% (56.7% PROVIDED)

ADDITIONAL PERIMETER WIDTH (SEC. 6.2.B.6.):

REQUIRED: 10'  
PROVIDED: 15' EAST SIDE AND 7' (WEST SIDE) \*WAIVER REQUIRED

DUMPSTER SCREENING (SEC. 6.2.B.8): MINIMUM REQUIRED AT LEAST 5' IN WIDTH.

REQUIRED: 5'  
PROVIDED: 6'

STREET TREE LANDSCAPE STRIP: (SEC. 6.2.B.10)

REQUIRED: 1 TREE SPACED EVERY 40' ( $420'/40'$ ) = 10.5 OR 11 TREES  
PROVIDED: 11 TREES

LANDSCAPING AROUND BUILDING (SEC. 6.2.D.1.): SHALL BE PROVIDED TO A MINIMUM WIDTH OF 10' AND PLANTED WITH TREES, SHRUBS, AND GRASS COVER.

REQUIRED LANDSCAPE AREA = 10'  
PROVIDED LANDSCAPE AREA = 5' ON EAST SIDE OF BUILDING \*WAIVER REQUIRED

LANDSCAPING OF PARKING AREAS (SEC. 6.2.E): SHALL HAVE 30% SHADE USING 30' DIAMETER TREE CANOPY AFTER 10 YEARS.

REQUIRED: 30%  
PROVIDED: 38.2%

## TAX MAP 92 LOT 31

## LANDSCAPE PLAN

## THE MUSE APARTMENTS

OWNED BY

**CITY OF LEBANON**

**THE MUSE LEBANON, LLC**

**SCALE: 1"=30'**

AUGUST 12, 2024

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HORIZONTAL SCALE 1"=20'



A horizontal scale bar with alternating black and white segments. The segments are labeled 20, 10, 0, and 20 from left to right, indicating distances in feet.

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Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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PROJECT NO. 96202.01

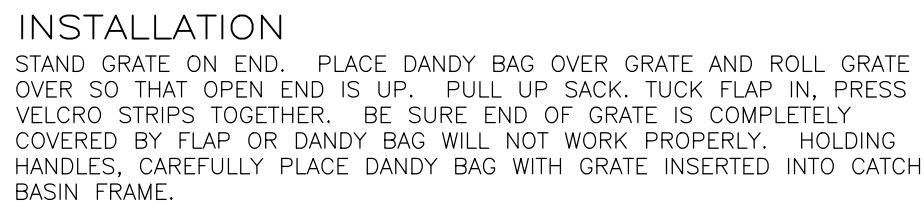
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C-10

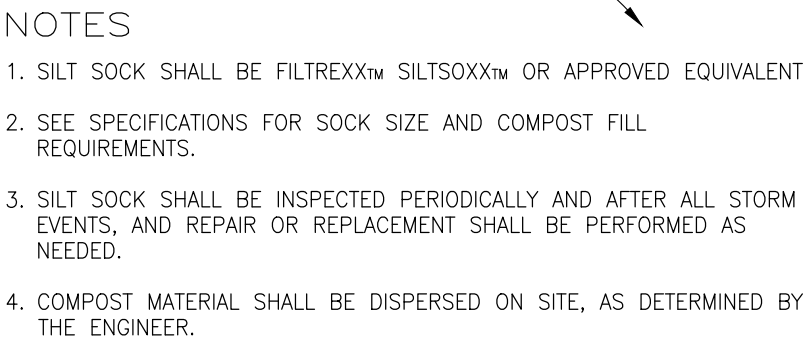




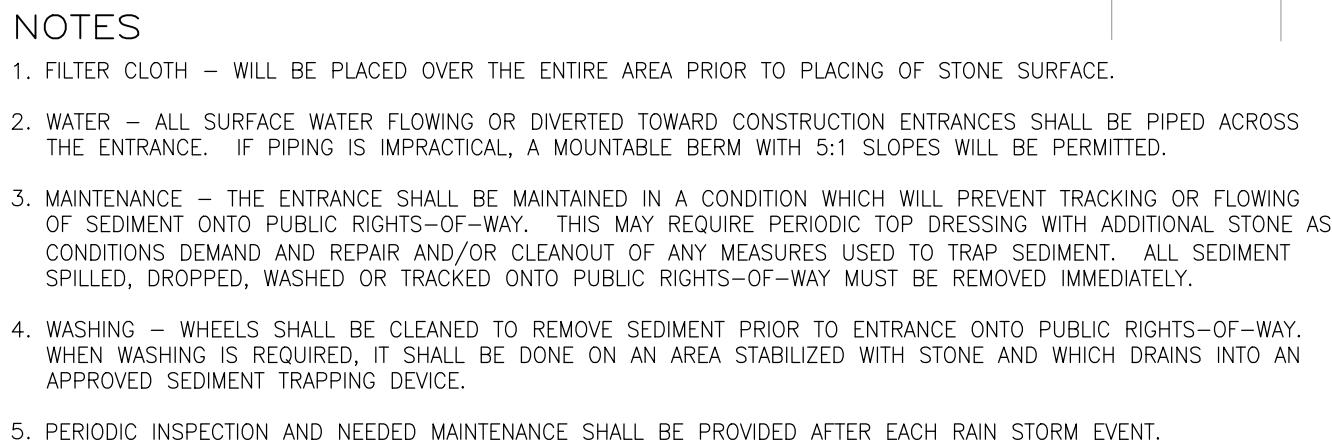
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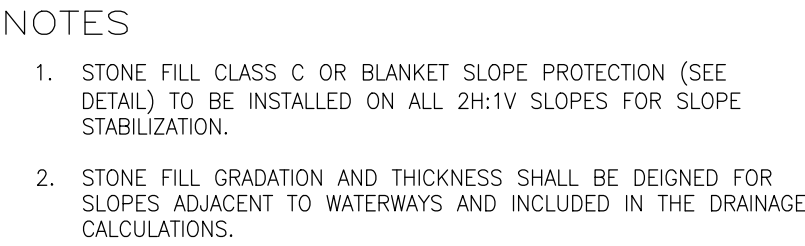
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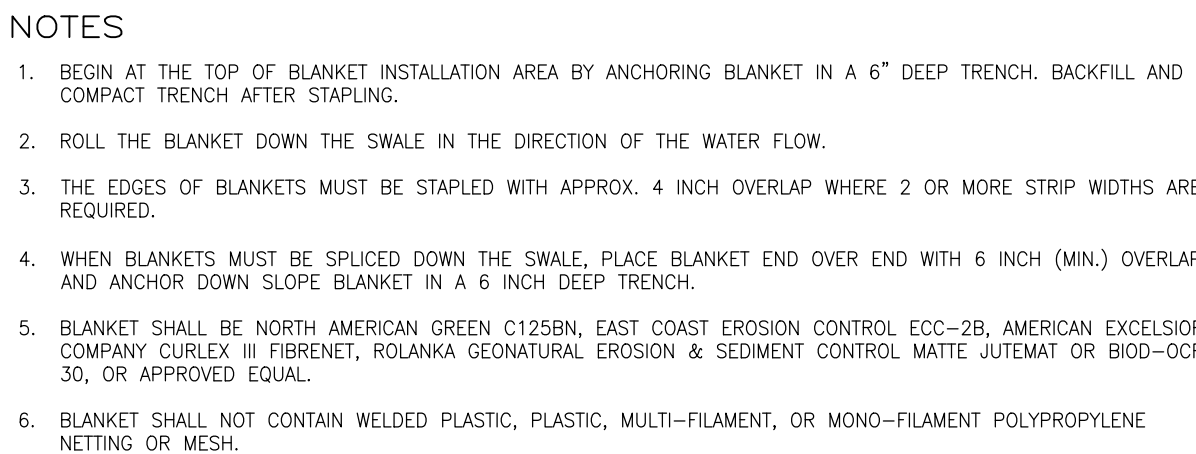
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SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE



NOT TO SCALE



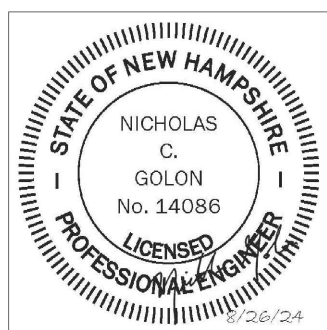
FOR EROSION CONTROL NOT TO SCALE

## TAX MAP 92 LOT 31

OWNED BY  
**CITY OF LEBANON**  
PREPARED FOR  
**THE MUSE LEBANON,**

**SCALE: NOT TO SCALE**

**AUGUST 12, 2024**

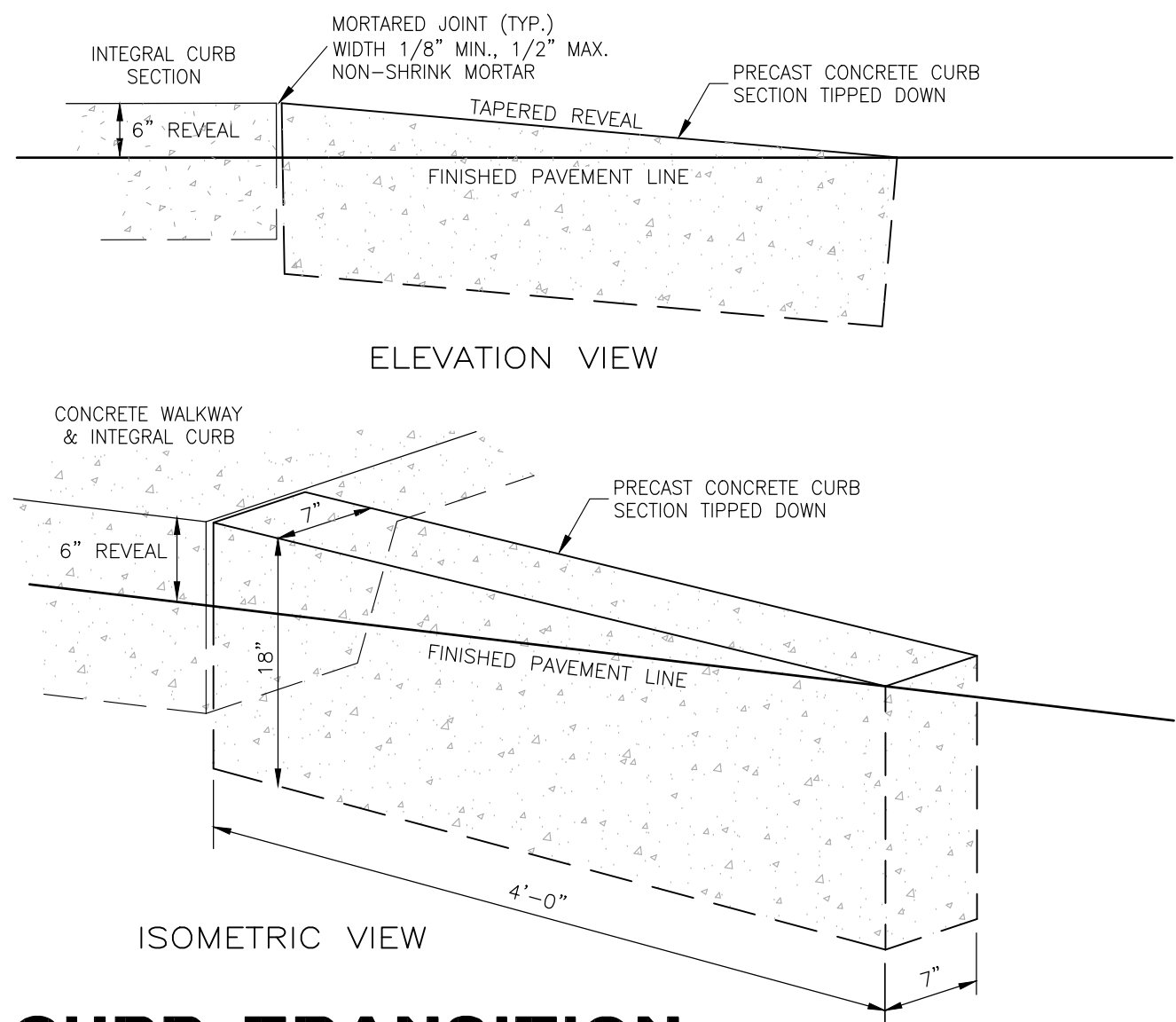


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| 1           | 8/26/2024   | CITY REVIEW        | JD        | NG        |
| <i>REV.</i> | <i>DATE</i> | <i>DESCRIPTION</i> | <i>DR</i> | <i>CK</i> |

|                                                                                       |  |          |           |                                                                                                                      |                     |                                                                                                                                                |      |
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|  |  |          |           | Civil Engineers<br>Structural Engineers<br>Traffic Engineers<br>Land Surveyors<br>Landscape Architects<br>Scientists |                     | 48 Constitution Drive<br>Bedford, NH 03110<br>Phone (603) 472-4488<br>Fax (603) 472-9747<br><a href="http://www.tfmnor.com">www.tfmnor.com</a> |      |
| F<br>96202.01                                                                         |  | DR<br>CK | JED<br>NG | FB<br>CADFILE                                                                                                        | —<br><u>DETAILS</u> |                                                                                                                                                | D—01 |

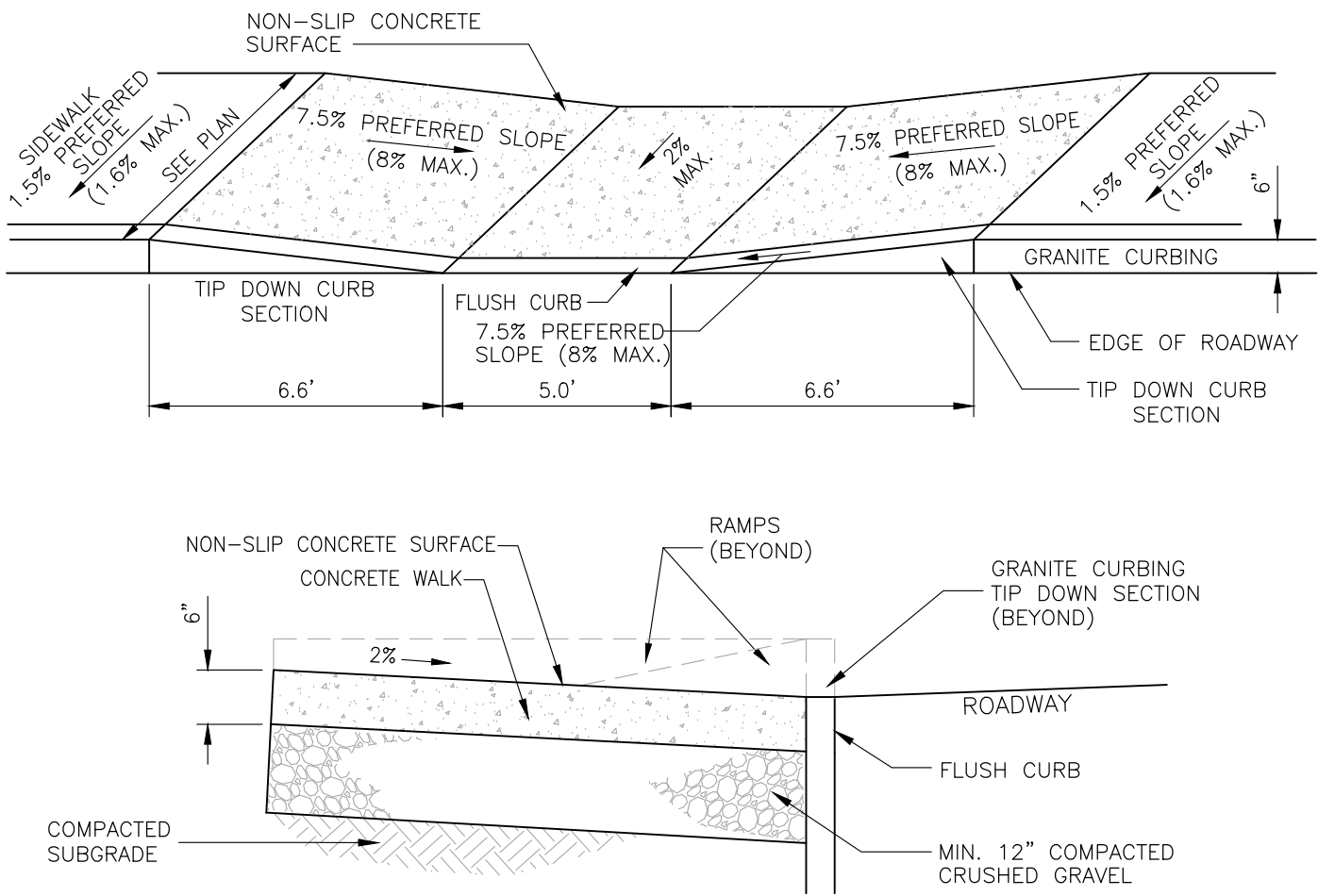






## CURB TRANSITION

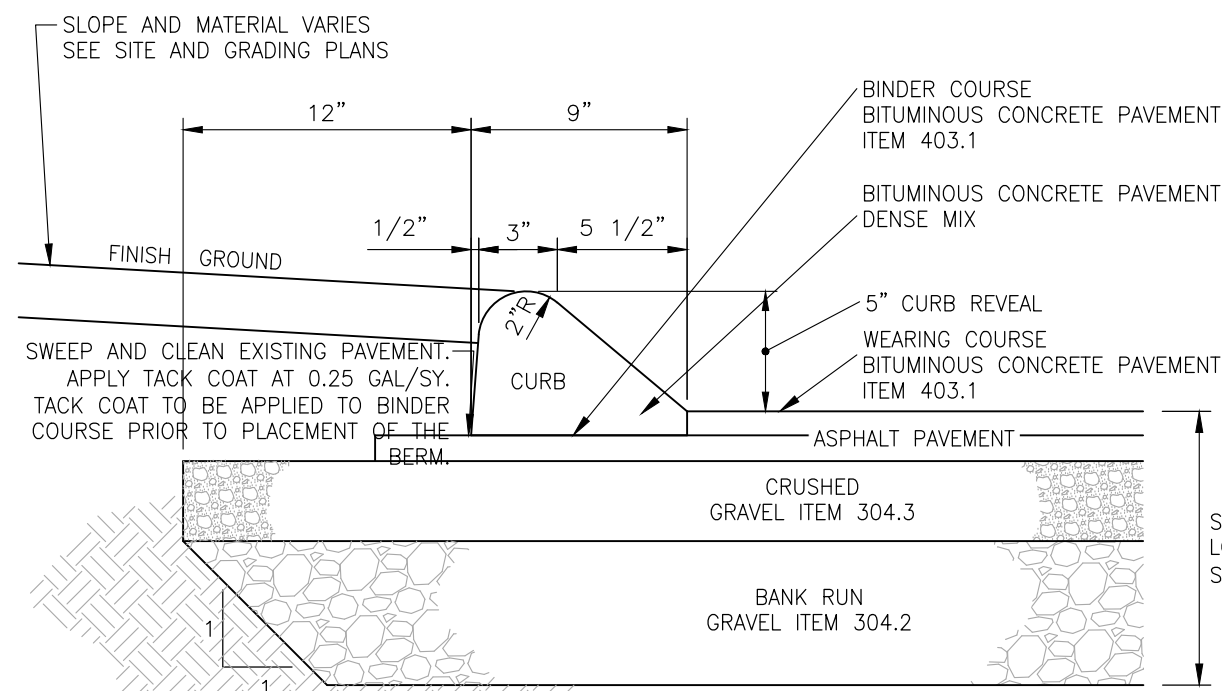
INTEGRAL CONC. TO PRECAST CONCRETE NOT TO SCALE



NOTES  
1. CURB RAMPS SHALL BE CONSTRUCTED OF 6" PORTLAND CEMENT CONCRETE (CLASS AA, 4000 PSI) WITH 6"x6" W2.9XW2.9 WOVEN WIRE FABRIC REINFORCING PLACED 2" FROM THE TOP OF THE SLAB WITH 6" CRUSHED GRAVEL SUBBASE

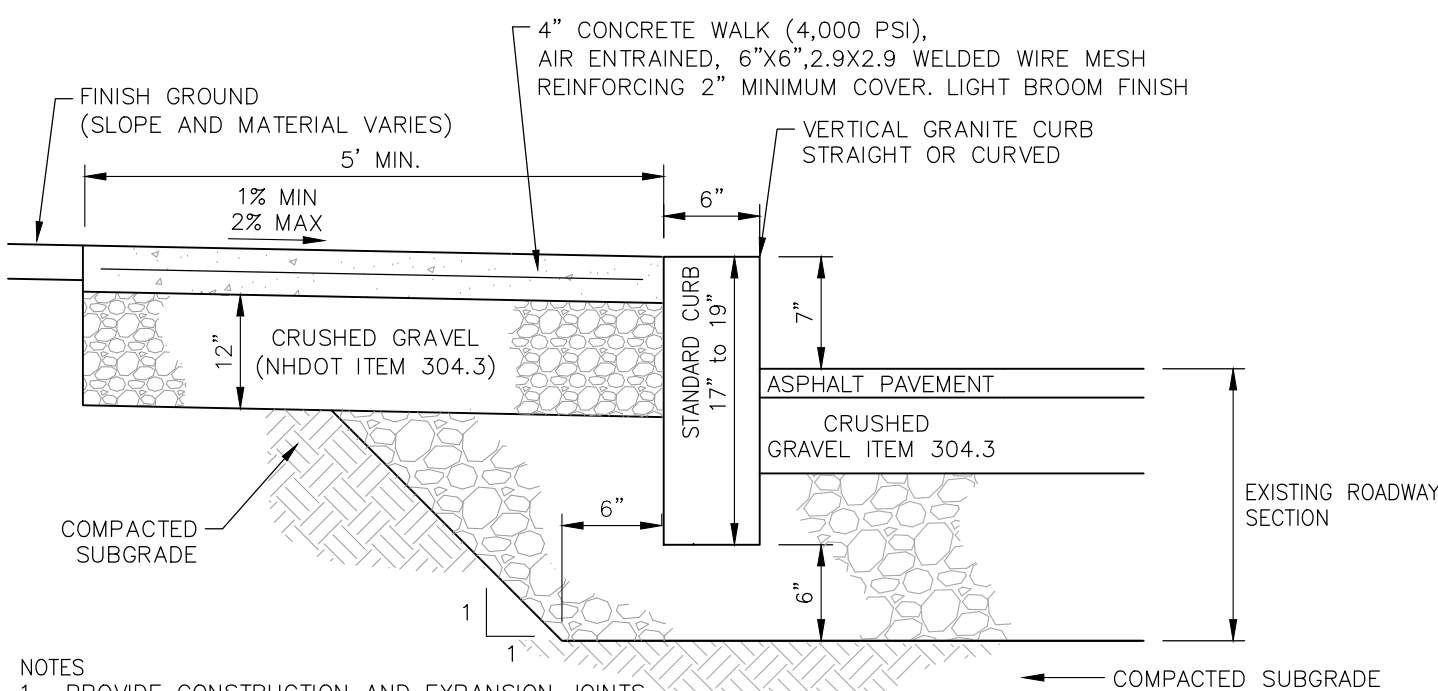
## ACCESSIBLE RAMP RECESSED IN WALK

NOT TO SCALE



## BITUMINOUS CONCRETE CURB

NOT TO SCALE

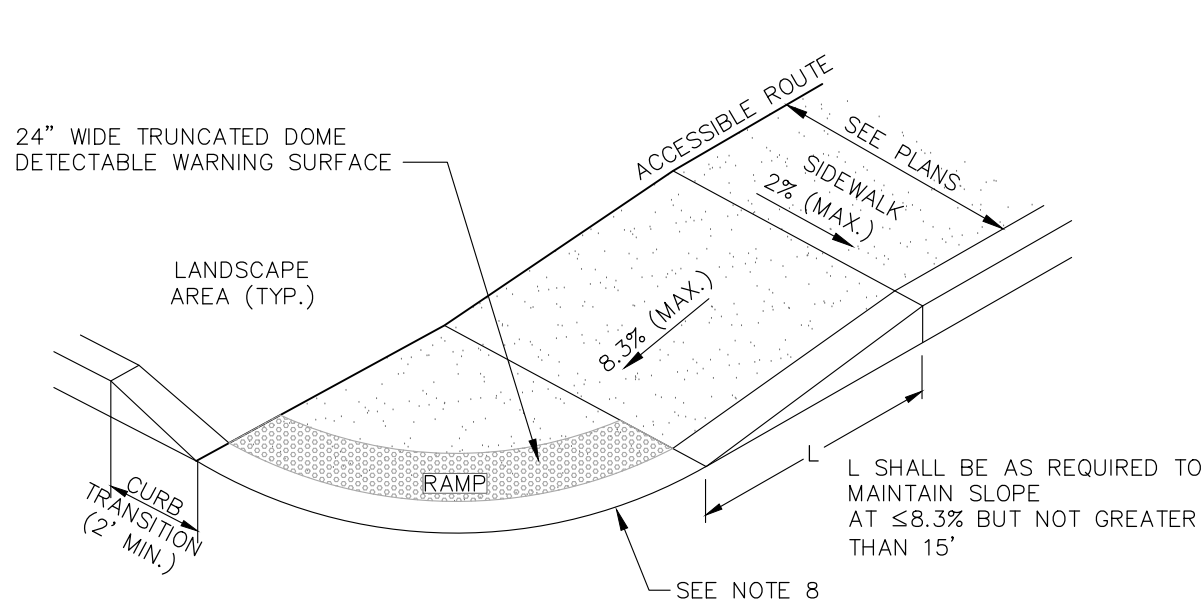


NOTES  
1. PROVIDE CONSTRUCTION AND EXPANSION JOINTS.  
2. PROVIDE TRANSITIONS & RAMPS PER A.D.A.  
3. SHIM GRADES WITH NHDOT 304.3 WHERE NECESSARY  
4. MIN LENGTH OF CURB STONES 3'  
5. MAX LENGTH OF CURB STONES 10'  
6. MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART  
7. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH  
8. CRUSHED GRAVEL TO BE COMPACTED TO 95% MIN HAND COMPACTION IS NOT ALLOWED  
9. SEE ARCH PLANS AND SPECIFICATIONS FOR DEPTH OF GRAVELS AT TRANSITIONS TO DOORWAYS, RAMPS OR OTHER OPENINGS FOR FROST PROTECTION AT BUILDING ENTRY POINTS.

| RADIUS   | MAX LENGTH  |
|----------|-------------|
| <30'     | CURVED CURB |
| 31'-35'  | 5'          |
| 36'-42'  | 6'          |
| 43'-49'  | 7'          |
| 50'-56'  | 8'          |
| 57'-60'  | 9'          |
| OVER 60' | 10'         |

## VERTICAL GRANITE CURB

NOT TO SCALE

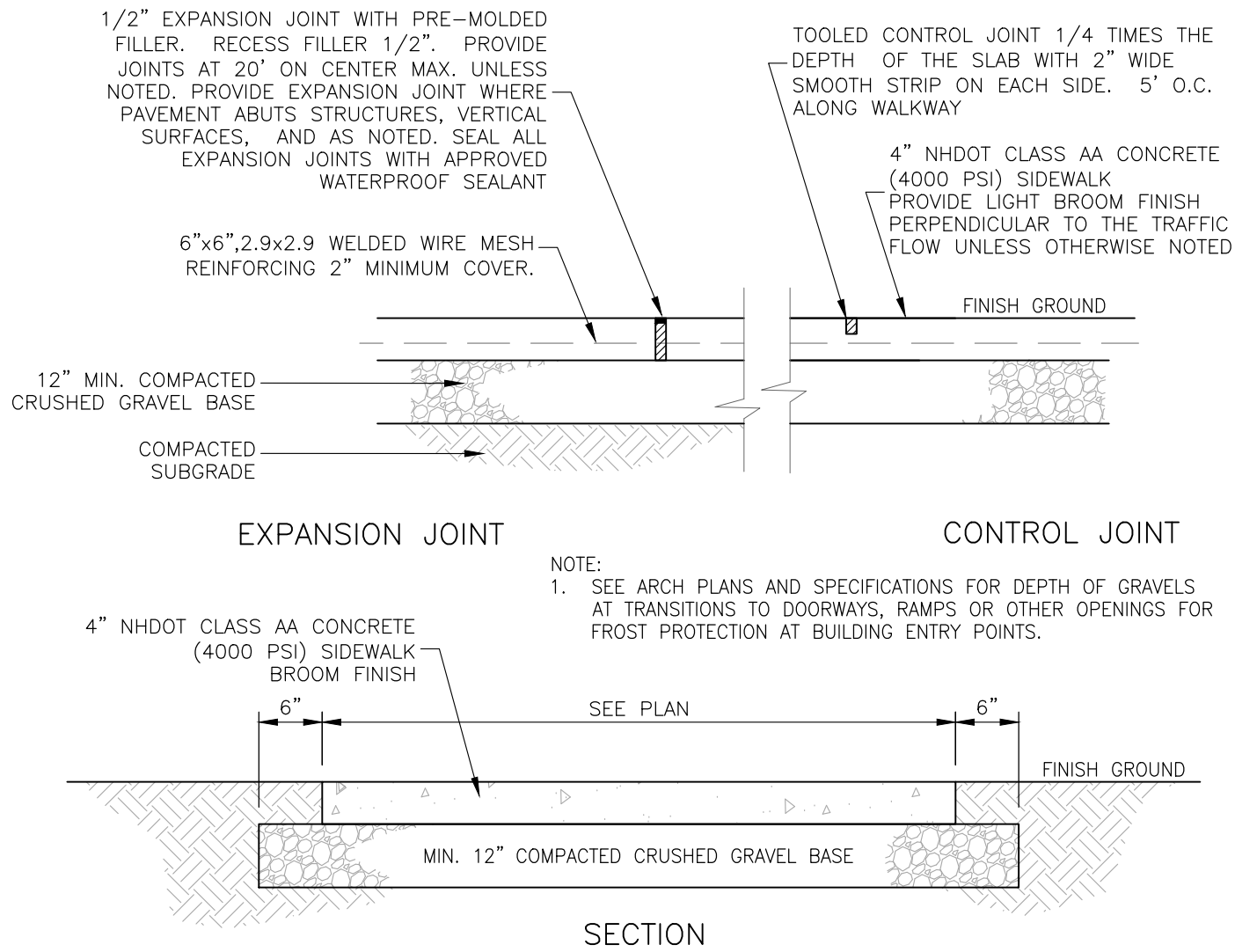


### NOTES

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 2%.
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE TRANSITION SHALL BE 8.3%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE. (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. CURBING, IF CALLED FOR, SHALL BE SET FLUSH WHERE IT ABUTS ROADWAY.

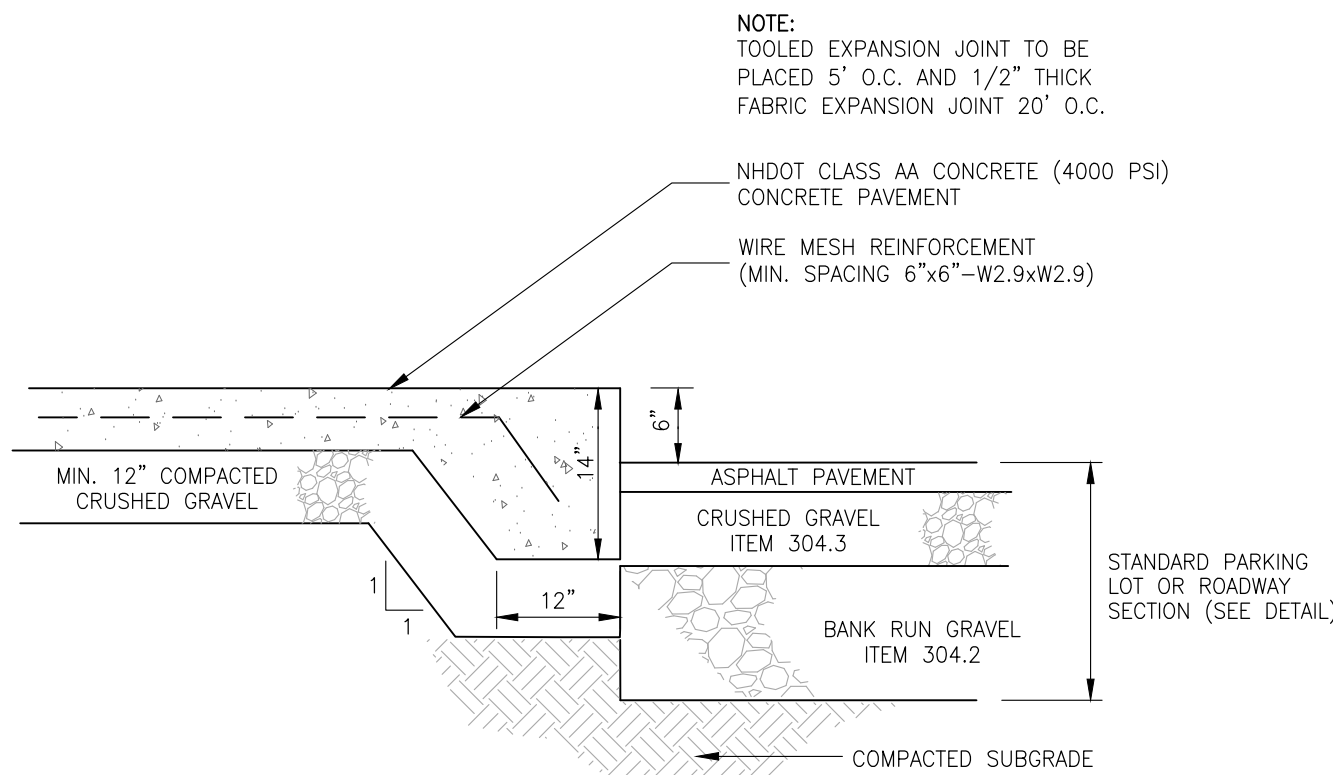
## ACCESSIBLE CURB RAMP

WITH DETECTABLE WARNING SURFACE NOT TO SCALE



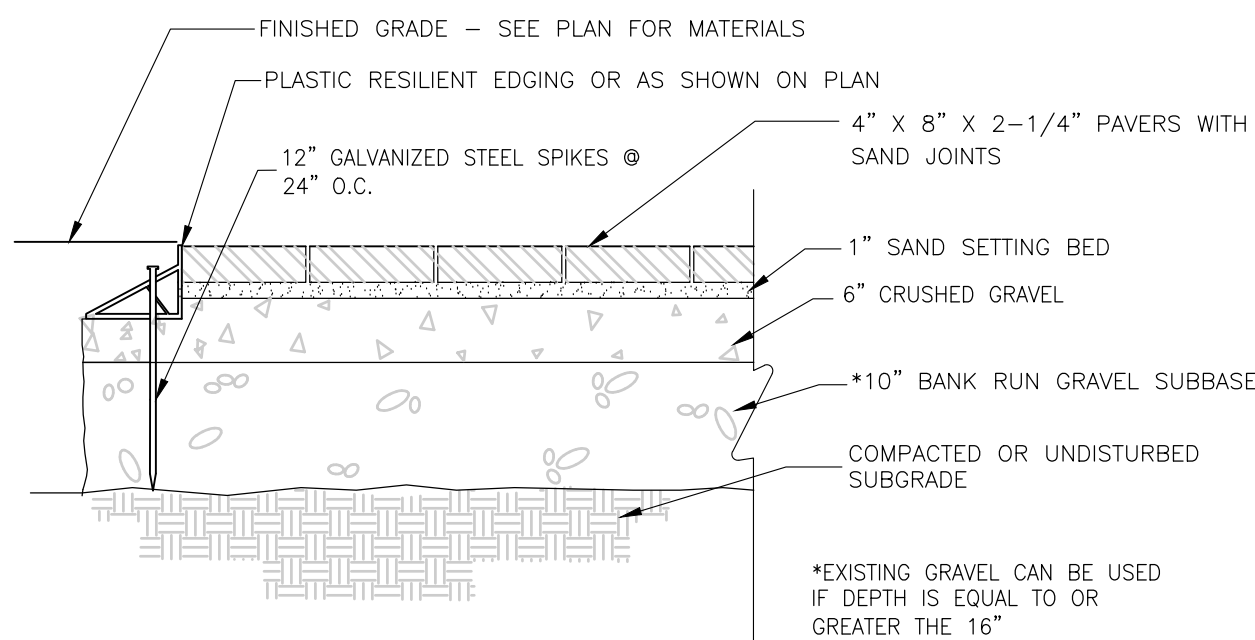
## CONCRETE SIDEWALK

NOT TO SCALE



## CONCRETE CURB AT SIDEWALK

NOT TO SCALE



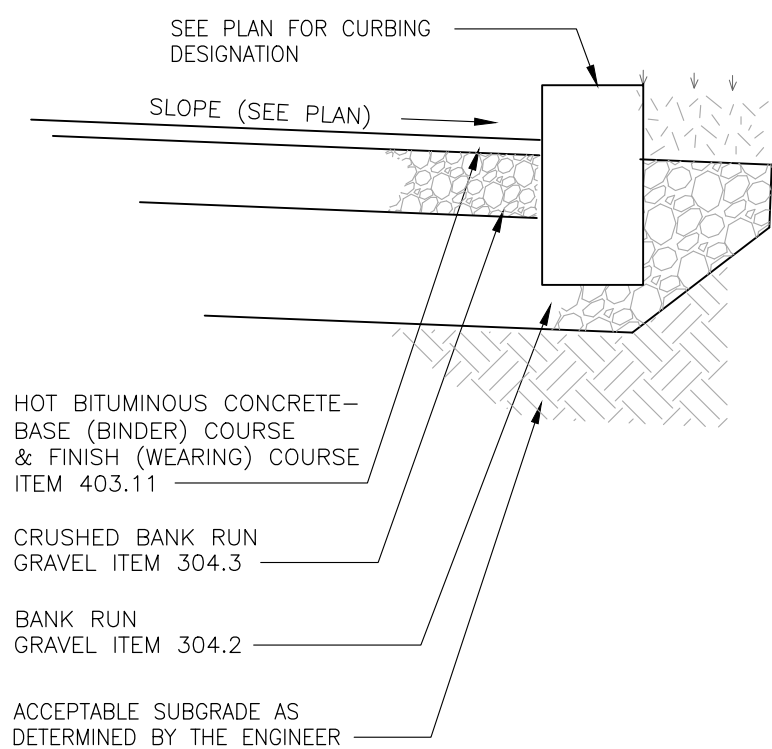
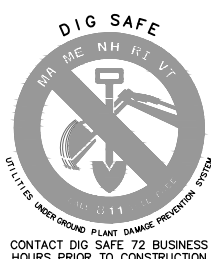
## BRICK PAVER/AGGREGATE BASE

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## PARKING LOT SECTION

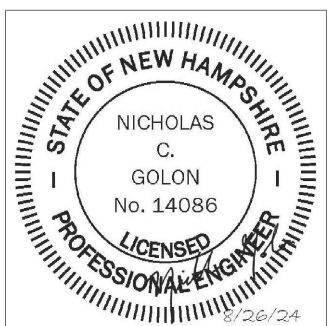
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| LAYER           | STANDARD DUTY |
|-----------------|---------------|
| TOP             | 1"            |
| BINDER          | 2"            |
| CRUSHED GRAVEL  | 6"            |
| BANK RUN GRAVEL | 12"           |

### ROAD CONSTRUCTION NOTES

REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.



| REV. | DATE      | DESCRIPTION | JD | NG |
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| 1    | 8/26/2024 | CITY REVIEW | JD | NG |

## SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

### DETAILS

**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**

OWNED BY

**CITY OF LEBANON**  
PREPARED FOR  
**THE MUSE LEBANON, LLC**

SCALE: NOT TO SCALE

AUGUST 12, 2024



Civil Engineers  
Structural Engineers  
Traffic Engineers  
Land Surveyors  
Landscape Architects  
Scientists

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Bedford, NH 03110  
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Fax (603) 472-9747  
www.tfmoran.com

96202.01

DR JED FB  
CK NG CADFILE

DETAILS

D-02

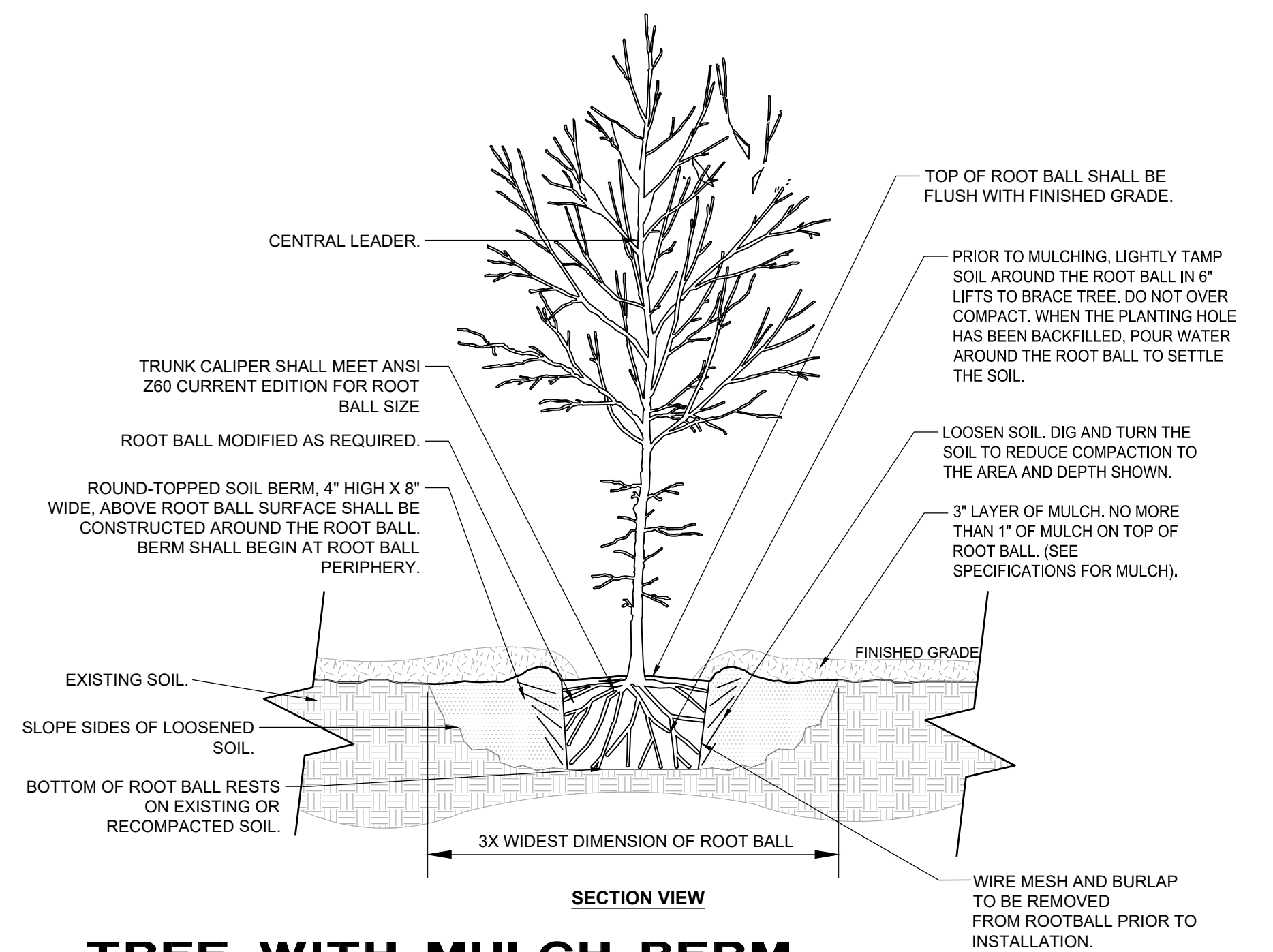




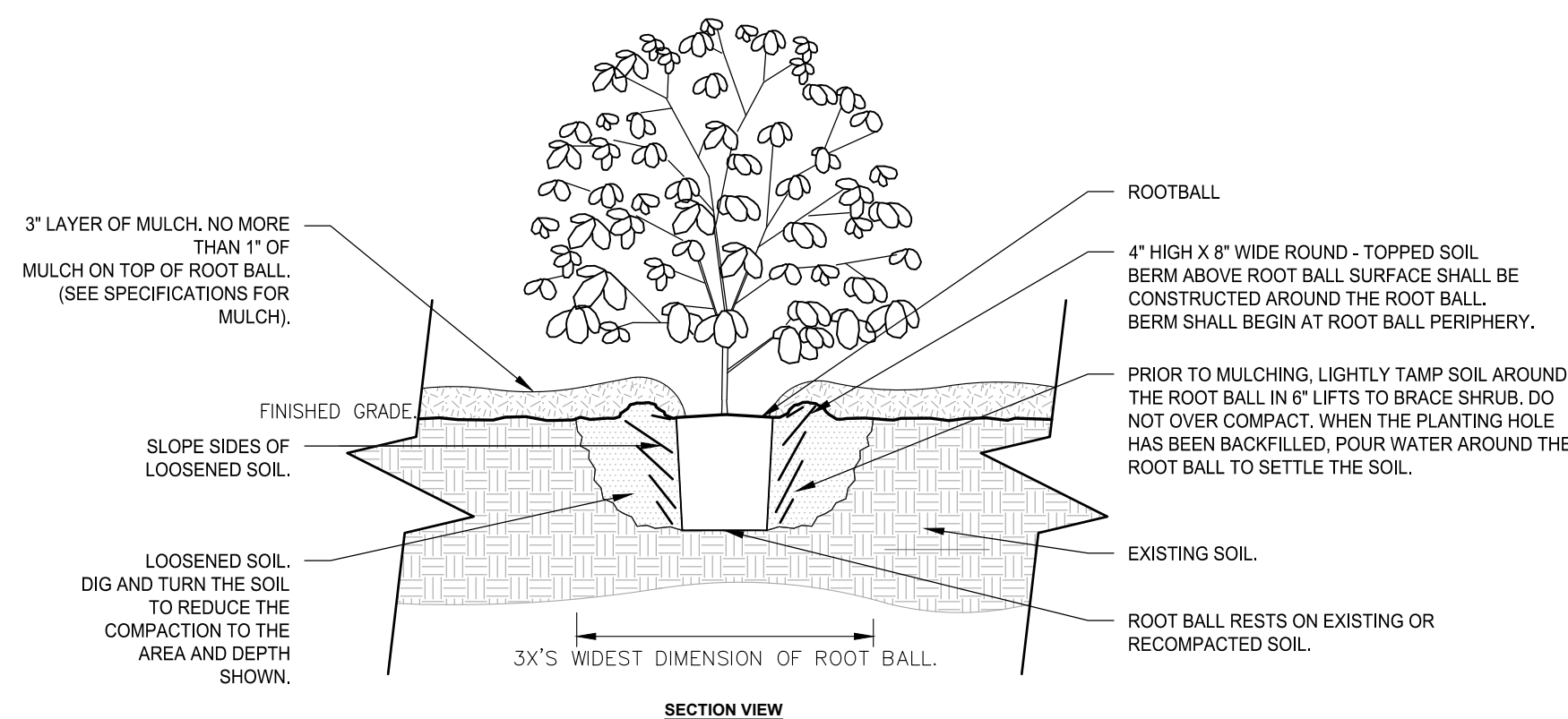






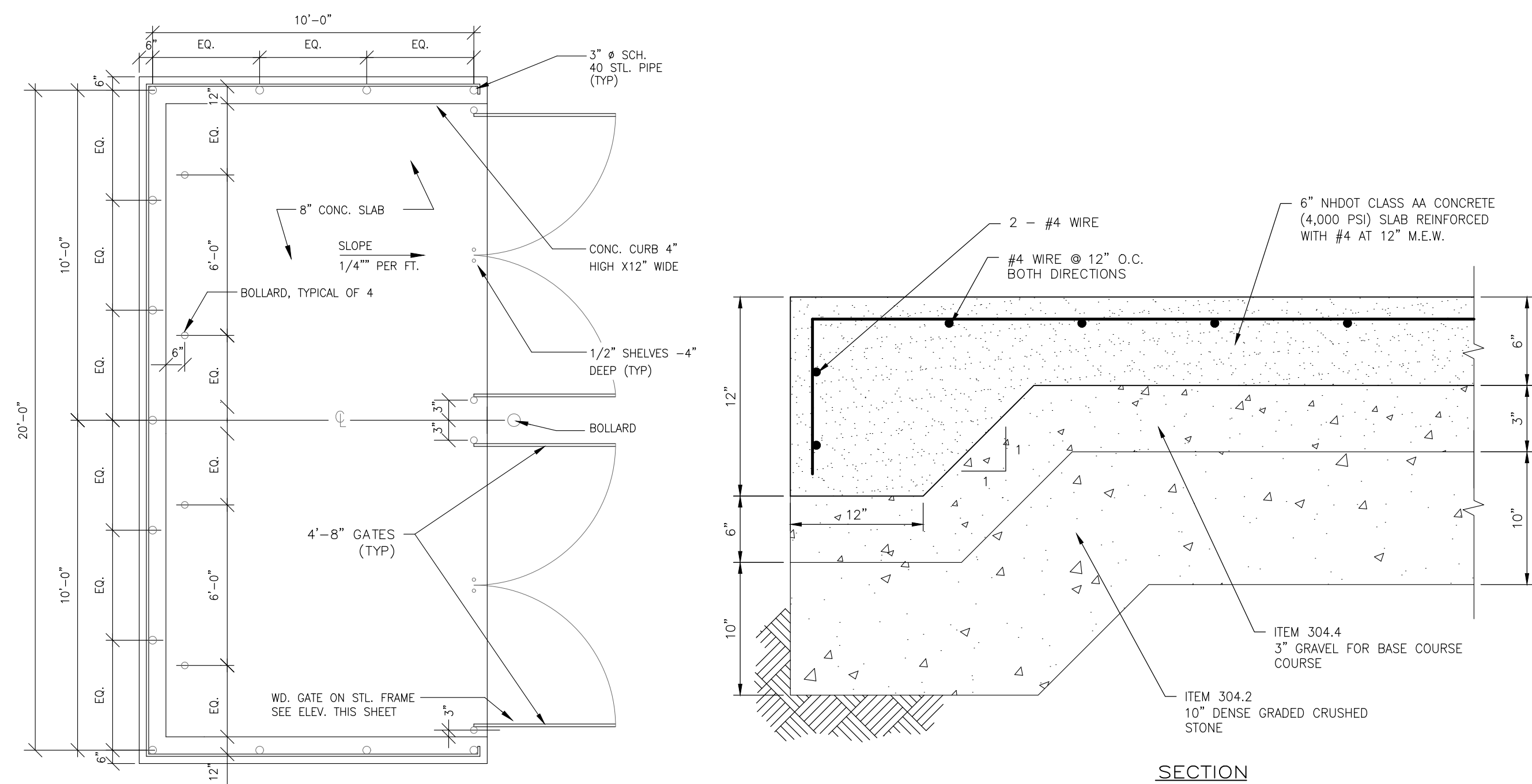


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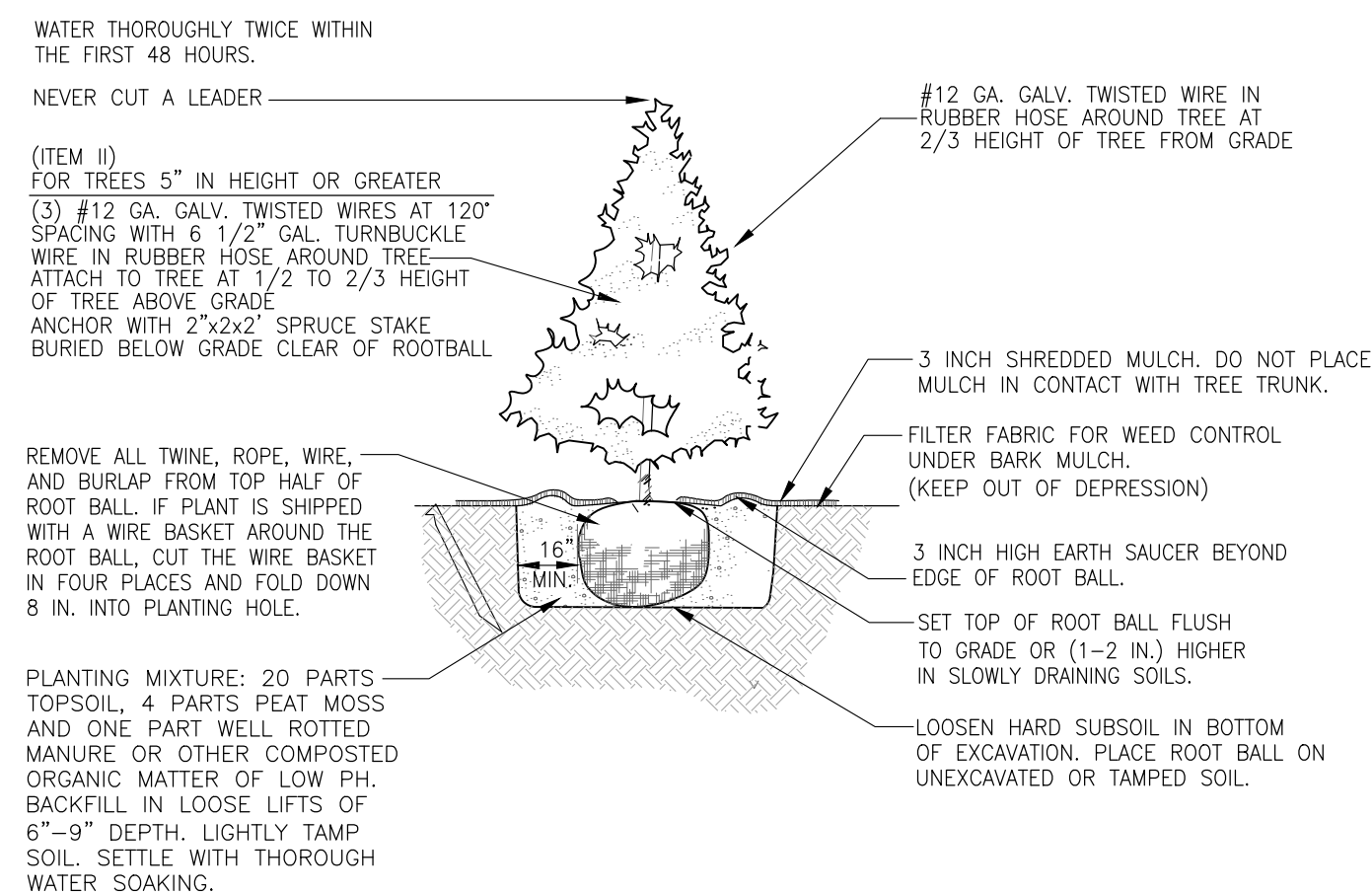
## SHRUB PLANTING

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## WOOD TRASH ENCLOSURE

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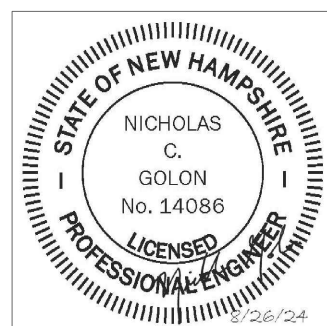
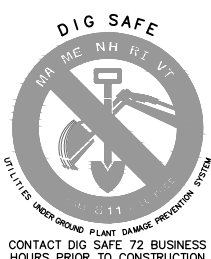
## EVERGREEN PLANTING

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| <i>REV.</i> | <i>DATE</i> |  | <i>DESCRIPTION</i> | <i>DR</i> | <i>CK</i> |

## SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

## DETAILS

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**20 SPENCER STREET LEBANON, NH**

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**SCALE: NOT TO SCALE**

**AUGUST 12, 2024**



- Civil Engineers
- Structural Engineers
- Traffic Engineers
- Land Surveyors
- Landscape Architects
- Scientists

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Fax (603) 472-9747  
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## DETAILS

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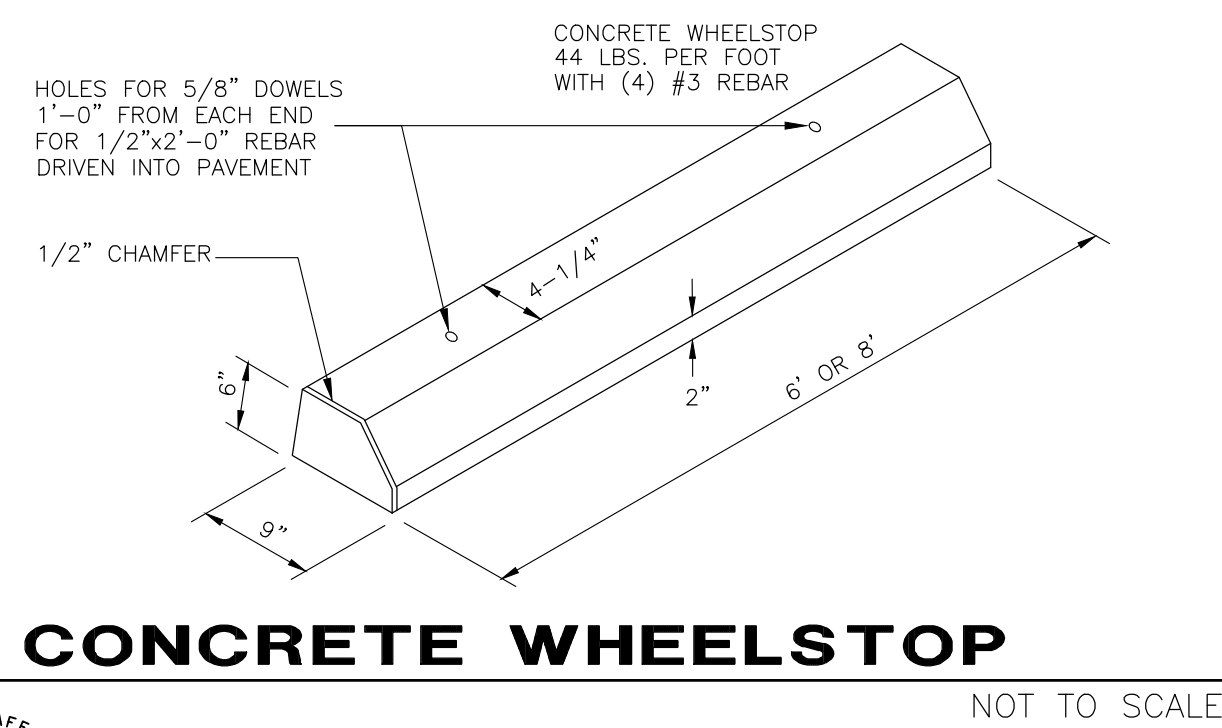
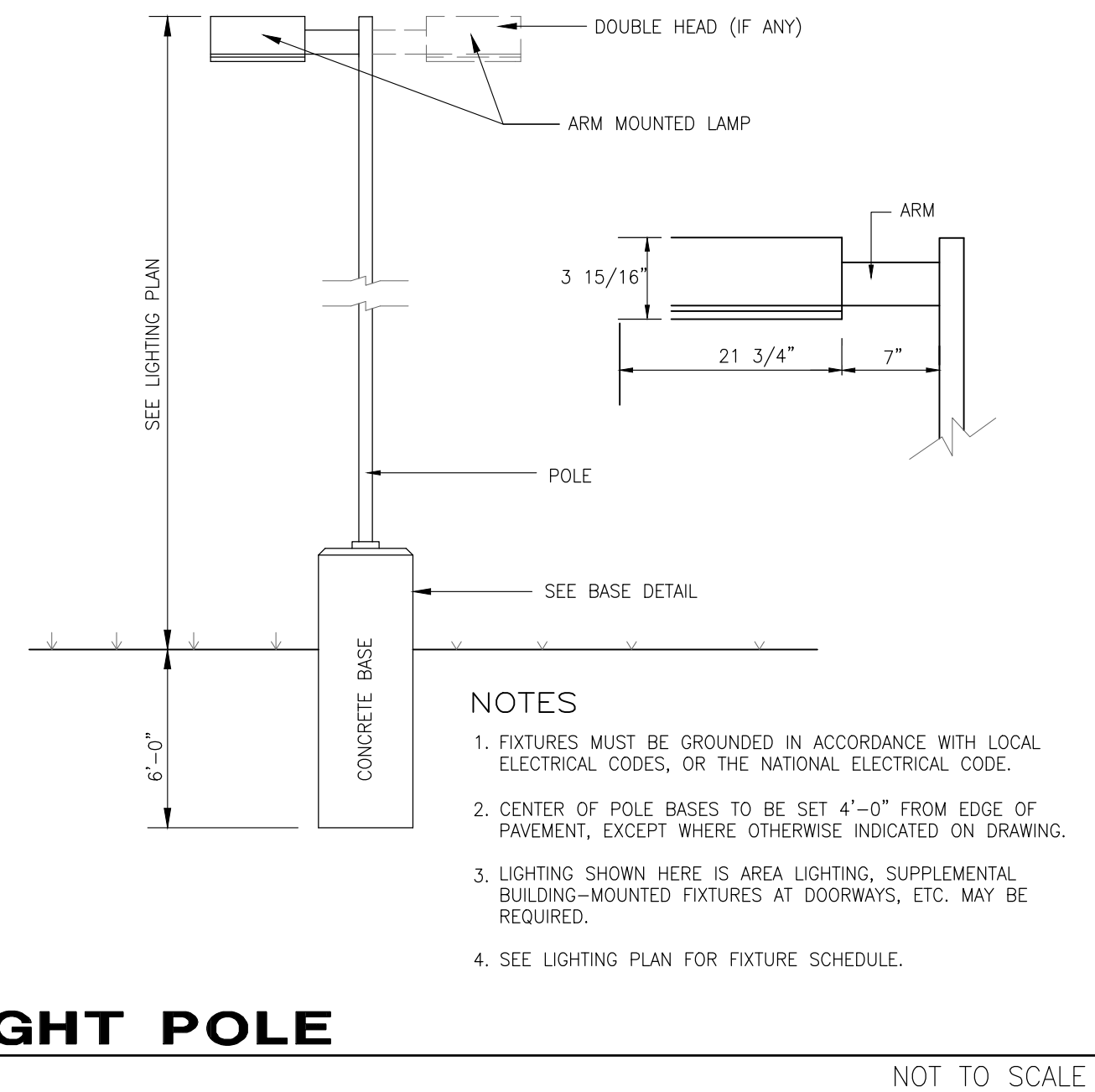
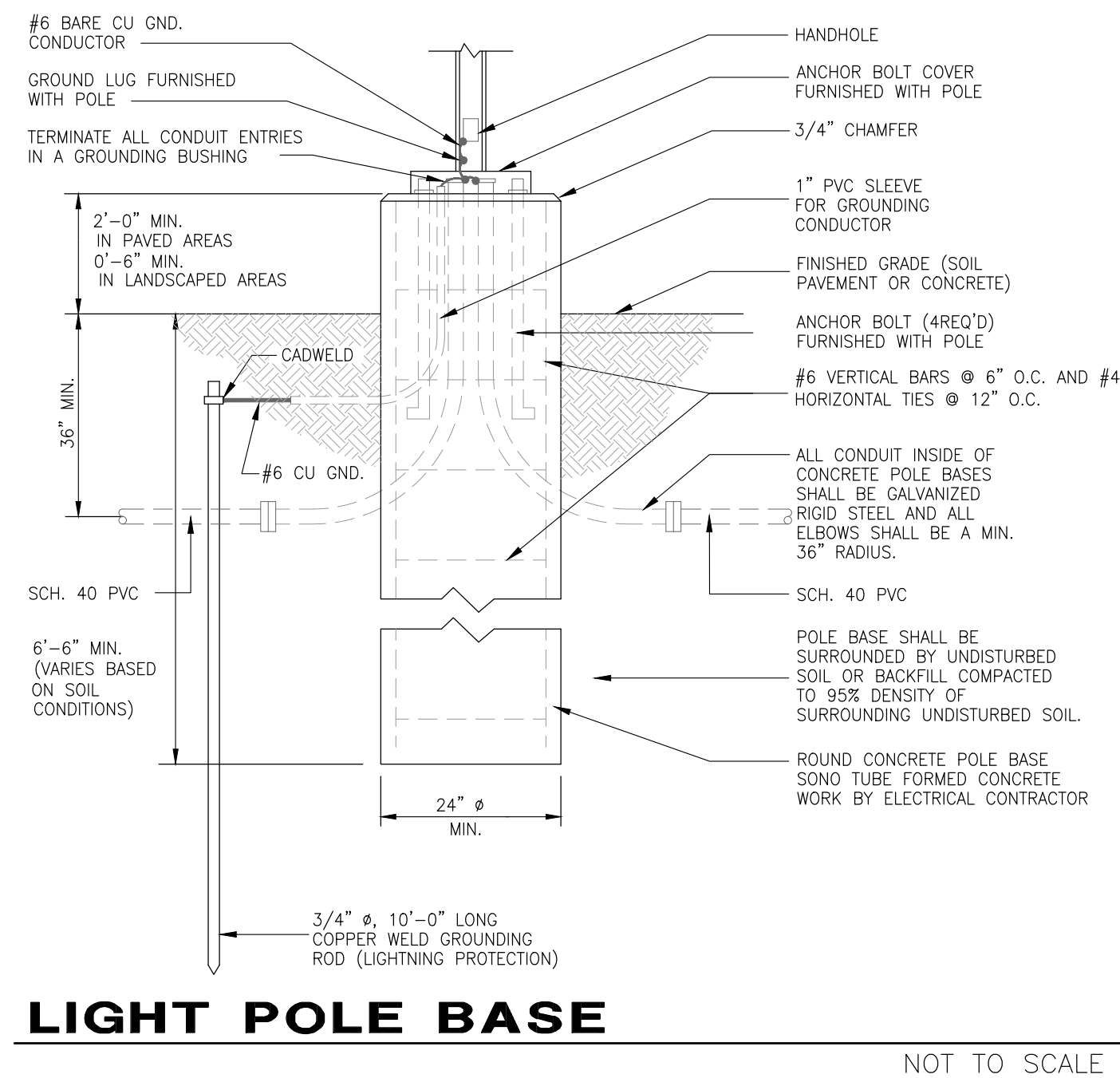
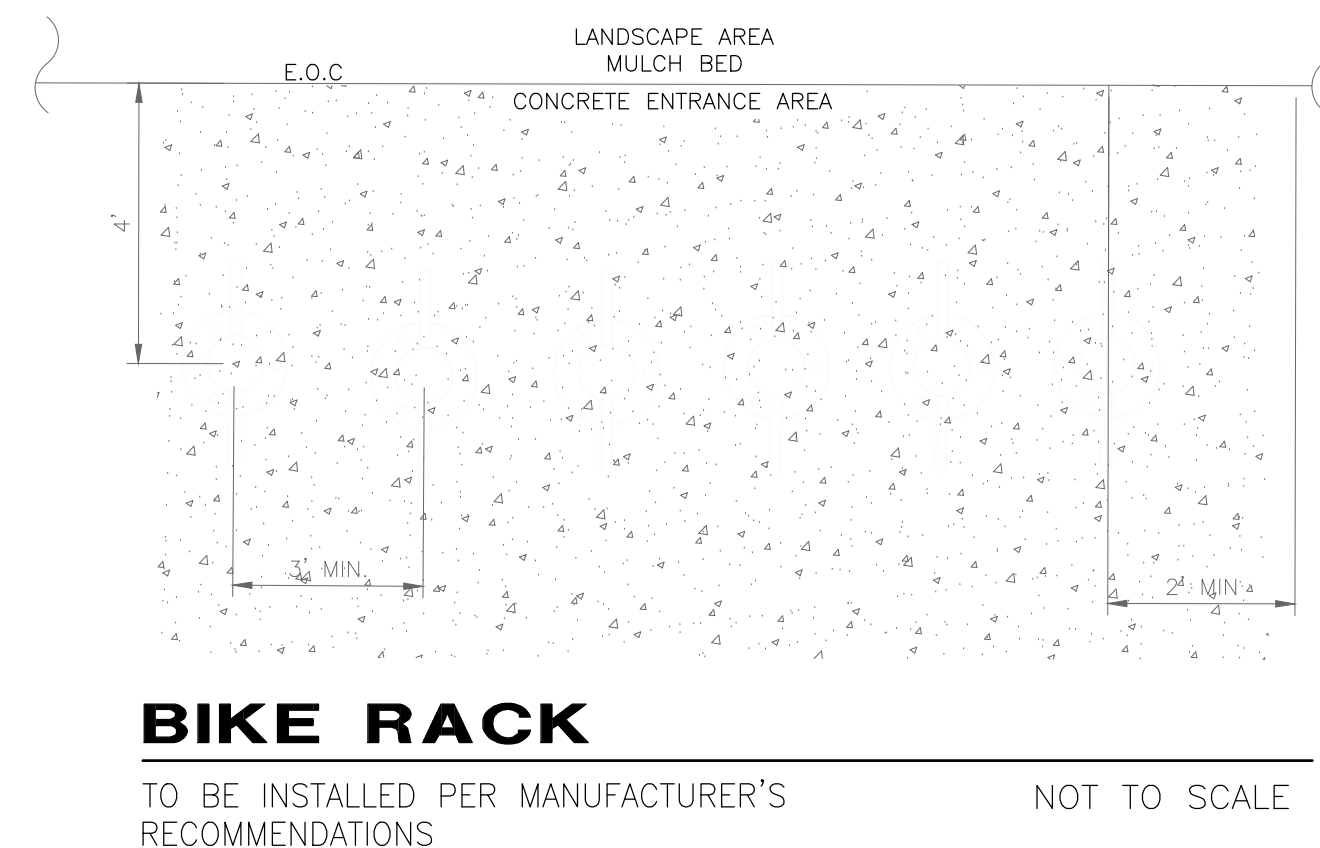
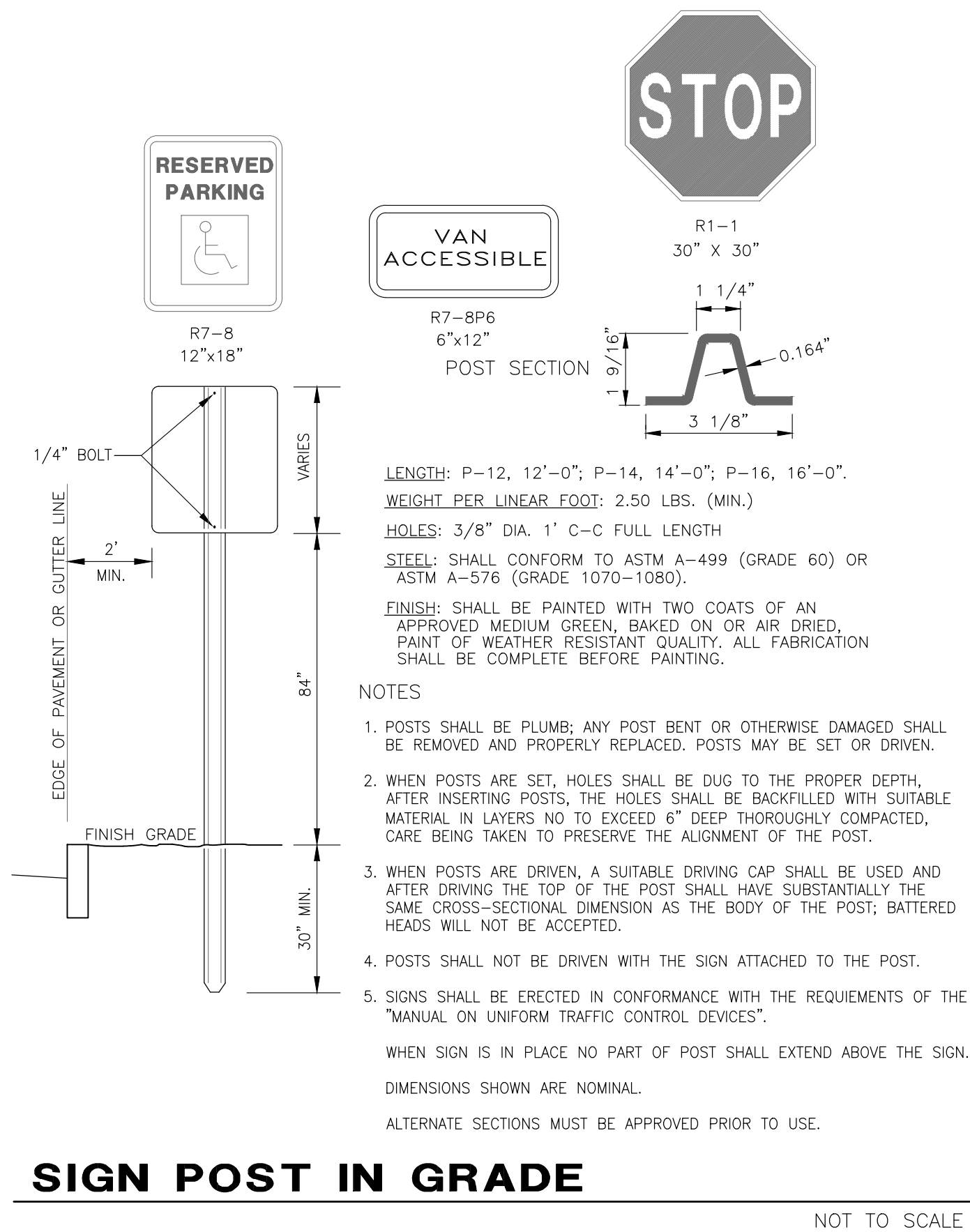
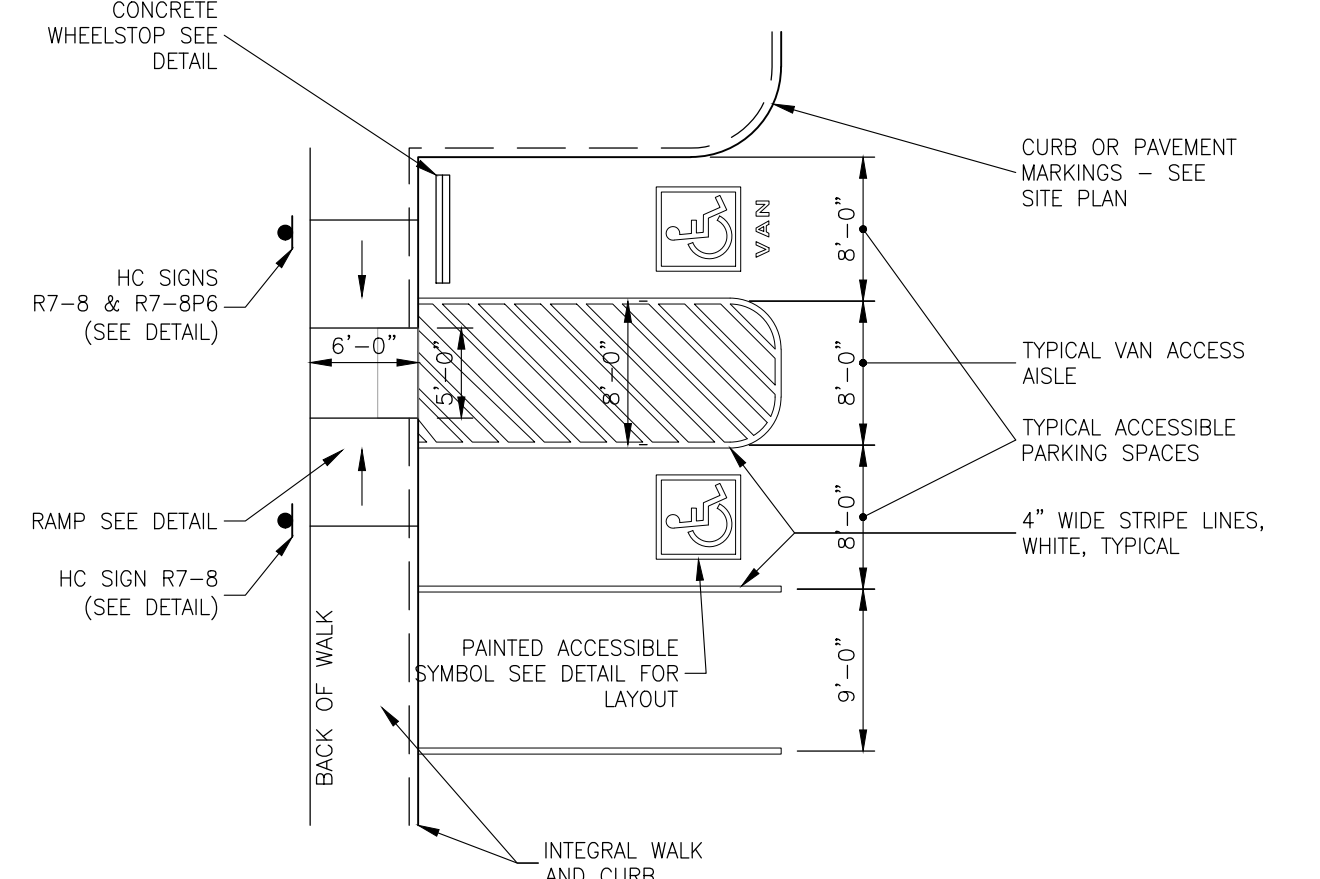
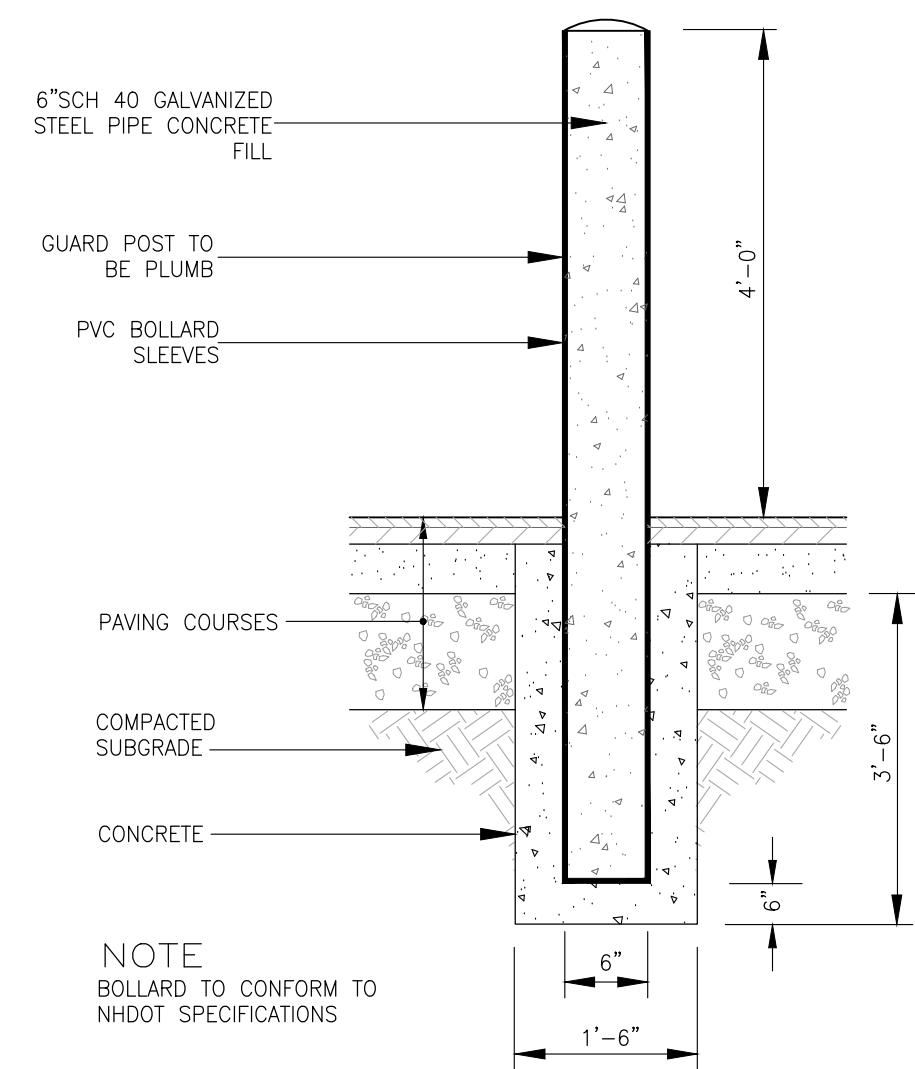
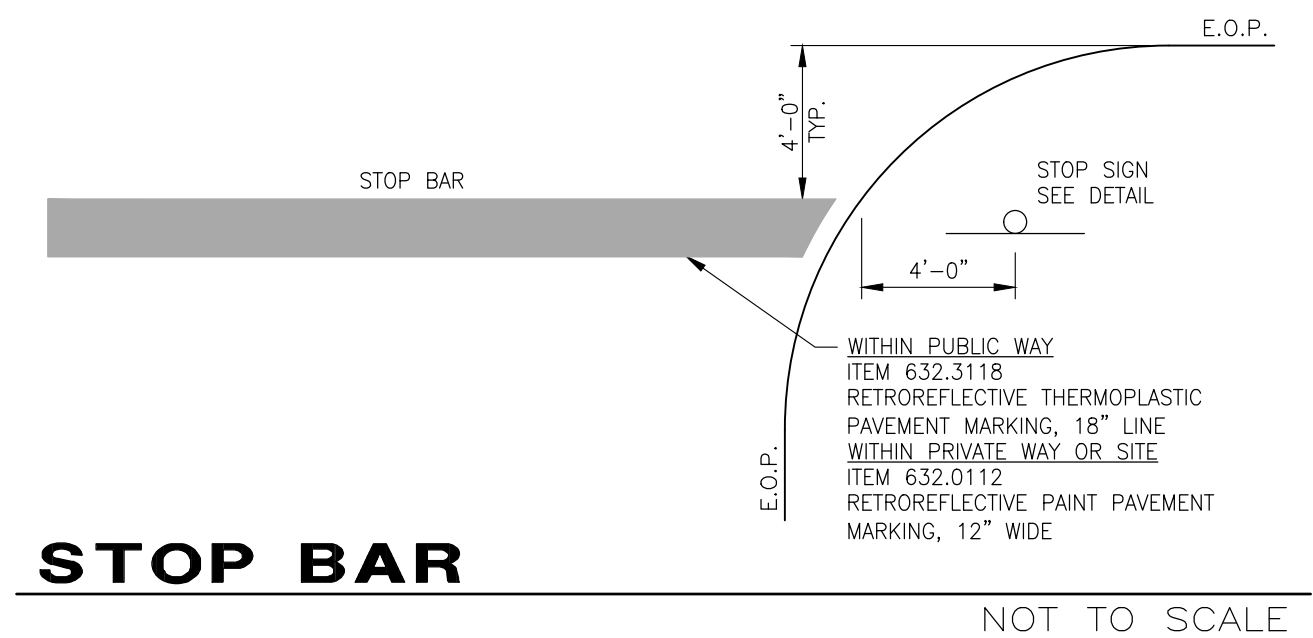
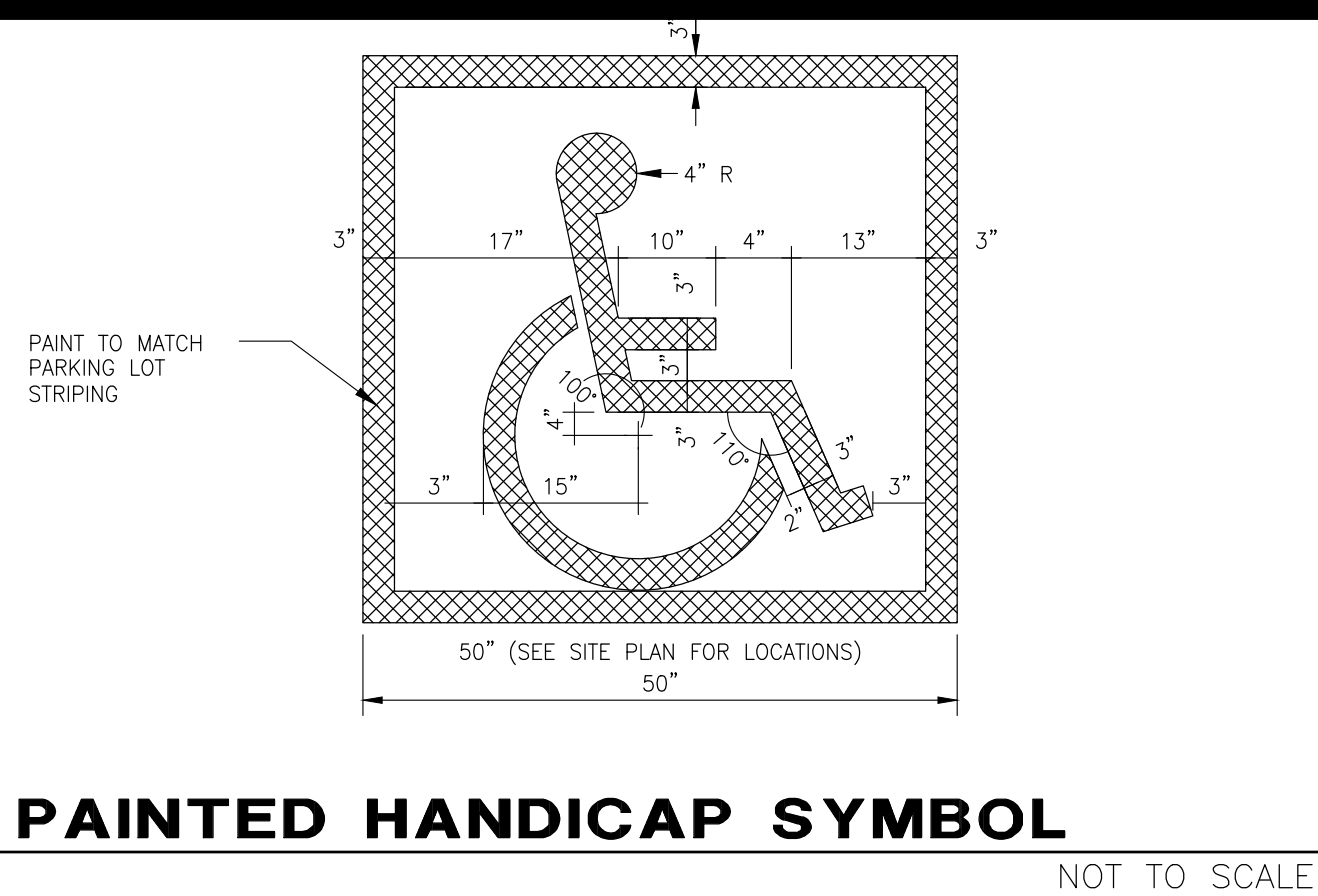












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## SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

## DETAILS

**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**

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**SCALE: NOT TO SCALE**

AUGUST 12, 2024



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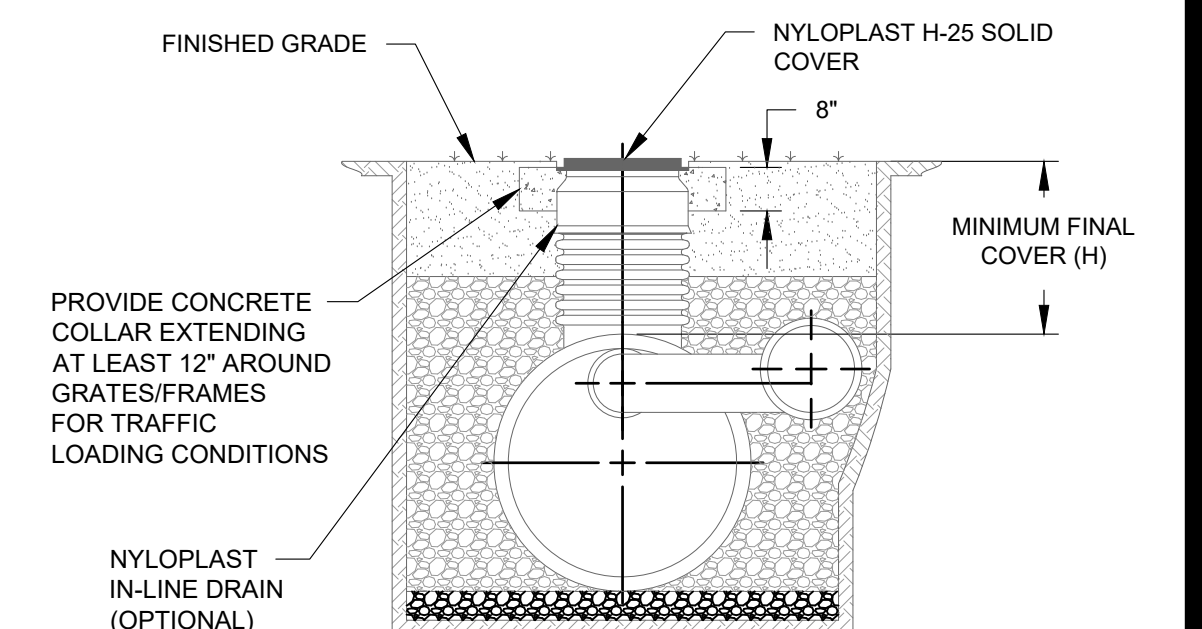


- FITTING DIMENSIONS VARY WITH UNIT DESIGN, DIMENSIONS CAN BE PROVIDED ONCE DESIGN IS EVALUATED.
- COMBINATIONS OF NYLOPLAST BASINS AND FABRICATED FITTINGS ARE AVAILABLE
- STRUCTURES BY OTHERS MAY BE USED.



1. CONTINUE BACKFILL WITH CLASS I MATERIAL PER ASTM D2321 TO 12" ABOVE WATER QUALITY UNIT.
2. FILL UNIT WITH WATER TO THE TOP OF THE SEDIMENT WEIR PLATE ONCE BACKFILL IS PLACED AND COMPACTED 12" ABOVE THE UNIT.

\* FOR 60" UNITS CONTINUE BACKFILL WITH CLASS I MATERIAL PER ASTM D2321 TO 24" ABOVE WATER QUALITY UNIT..



NOTES:

1. PLEASE FOLLOW THE INSTALLATION GUIDELINES FOUND IN THE ADS DRAINAGE HANDBOOK WHEN INSTALLING ADS N-12 PIPE ON THE BY-PASS CONNECTION OR IN OTHER DRAINAGE APPLICATIONS ON THE SITE.
2. ALL RISER EXTENSIONS TO GRADE SHOULD BE COORDINATED THROUGH YOUR ADS REPRESENTATIVE.

FOR NON-TRAFFIC LOADING: H = 12" COVER FOR 36", 42", AND 48" UNITS  
MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF BITUMINOUS  
PAVEMENT OR TOP OF RIGID PAVEMENT. H = 24" COVER FOR 60" PIPE.

FOR TRAFFIC LOADING H = 24" COVER FOR 36", 42", 48", AND 60"  
MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF  
BITUMINOUS PAVEMENT OR TOP OF RIGID PAVEMENT..

## ADS TRENCH & RAISER

NOT TO SCALE

## SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

## DETAILS

THE MUSE APARTMENTS  
20 SPENCER STREET LEBANON, NH

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**SCALE: NOT TO SCALE**

AUGUST 12, 2024

| MODEL #   | MAIN PIPE DIA. | SIEVE SIZE | PARTICLE SIZE (CM) | TREATED FLOW RATE (CFS) | INLET Ø | OUTLET Ø | OUTLET ORIFICE Ø | ELEVATION CHANGE* |
|-----------|----------------|------------|--------------------|-------------------------|---------|----------|------------------|-------------------|
| 3640WQAXX | 36"            | 140        | 0.0106             | 2.38                    | 10"     | 10"      | 9.9"             | 11.9"             |
| 3640WQBXX | 36"            | 200        | 0.0075             | 1.6                     | 10"     | 10"      | 8.08"            | 11.9"             |

XX DENOTES A BY-PASS SIZE OF 12", 15", 18", 24", 30", 36", 42", 48", OR 60"

XX=00 DENOTES UNITS W/OUT A BY-PASS.

\* ELEVATION CHANGE FOR UNITS WITHOUT A BY-PASS IS 2"

## ADS 36" WQU DETAIL

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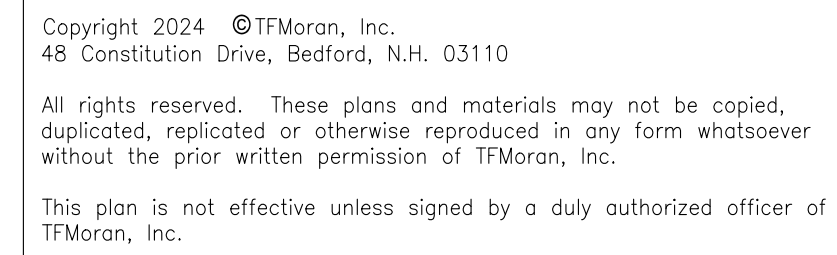


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|-------|---------------------------------------------------------------------------------------|----------|-----------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Title |  |          |           | Civil Engineers<br>Structural Engineers<br>Traffic Engineers<br>Land Surveyors<br>Landscape Architects<br>Scientists | 48 Constitution Drive<br>Bedford, NH 03110<br>Phone (603) 472-4488<br>Fax (603) 472-9747<br><a href="http://www.tfmoran.com">www.tfmoran.com</a> |      |
|       | 96202.01                                                                              | DR<br>CK | JED<br>NG | FB<br>CADFILE                                                                                                        | —<br>DETAILS                                                                                                                                     | D—09 |





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| <i>REV.</i> | <i>DATE</i> | <i>DESCRIPTION</i> |  | <i>DR</i> | <i>CK</i> |

Illuminance (Fc)  
Average = 2.20  
Maximum = 4.2  
Minimum = 0.6  
Avg/Min Ratio = 3.67  
Max/Min Ratio = 7.00

| Luminaire Schedule |     |       |             |                                                                     |                      |        |       |             |
|--------------------|-----|-------|-------------|---------------------------------------------------------------------|----------------------|--------|-------|-------------|
| Symbol             | Qty | Label | Arrangement | Description                                                         | [MANUFAC]            | HEIGHT | CCT   | Total Watts |
| ☐                  | 2   | C     | Single      | RS0561120SWH LED (3000K)                                            | NICOR, Inc.          | 10'    | 3000K | 24.54       |
| ●●☐                | 9   | S3-HS | Single      | MRM-LED-09L-SIL-3-UNV-DIM-30-70CRI-IL-CXX / 4SQ B3 SIL1G16 S AB 4BC | LSI INDUSTRIES, INC. | 18'    | 3000K | 558         |
| ●●☐                | 2   | S5    | Single      | MRM-LED-07L-SIL-5W-UNV-DIM-30-70CRI-CXX / 4SQ B3 SIL1G16 S AB 4BC   | LSI INDUSTRIES, INC. | 18'    | 3000K | 96          |
| ☐                  | 1   | W     | Single      | XWS-LED-08L-SIL-FT-UNV-DIM-30-70CRI-CXX                             | LSI INDUSTRIES, INC. | 8'     | 3000K | 61          |
| ☐                  | 2   | W1    | Single      | XWS-LED-03L-MTPD-UNV-DIM-30-80CRI-CXX                               | LSI INDUSTRIES, INC. | 8'     | 3000K | 30          |
| ☐                  | 4   | W2    | Single      | XWS-LED-03L-SIL-2-UNV-DIM-30-70CRI-CXX                              | LSI INDUSTRIES, INC. | 8'     | 3000K | 76          |

## 1. CALCULATIONS AND LIGHTING DESIGN BY EXPOSURE LIGHTING, INC.



TAX MAP 92 LOT 31  
**LIGHTING PLAN**  
**THE MUSE APARTMENTS**  
**20 SPENCER STREET LEBANON, NH**  
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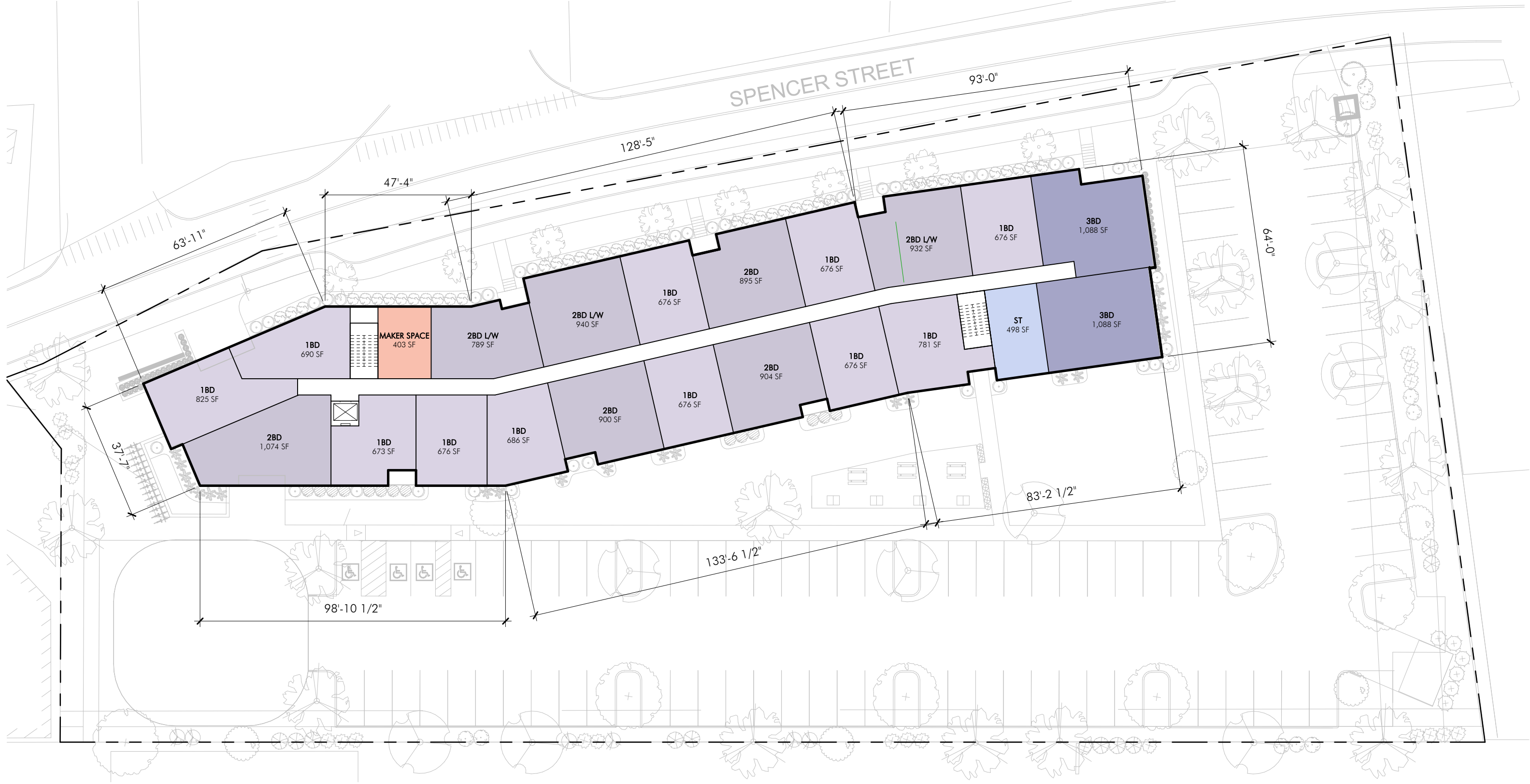




BICYCLE STORAGE RACK, BASIS OF DESIGN:  
DERO DECKER 2-TIER BIKE RACK SYSTEM  
4 BICYCLES/ RACK CAPACITY

76 WALL MOUNTED BICYCLES  
4 FLOOR MOUNTED BIKES  
80 TOTAL INTERIOR BICYCLE PARKING SPACES

1 GROUND FLOOR PLAN - LEVEL 1  
1" = 30'-0"



2 TYPICAL FLOOR PLAN - LEVELS 2 TO 4  
1" = 30'-0"

GENERAL NOTES:

- SITEWORK SHOWN FOR COORDINATION PURPOSES ONLY. SEE SURVEY, CIVIL AND LANDSCAPE DRAWINGS FOR SITE INFORMATION AND ADDITIONAL DETAILS.
- FIRE PROTECTION SYSTEMS AND LOCATIONS WILL BE PROVIDED DURING BUILDING PERMIT REVIEW AND COORDINATED WITH THE LOCAL AHI.
- SEE PHOTOMETRIC PLAN FOR LIGHTING INFORMATION

| UNIT COUNTS    |       |                |       |  |
|----------------|-------|----------------|-------|--|
|                | Count | Avg Size (GSF) | Ratio |  |
| Studio         | 4     | 498            | 5%    |  |
| 1 BR           | 41    | 621            | 51%   |  |
| 2 BR           | 18    | 840            | 23%   |  |
| 2 BR Live/Work | 9     | 865            | 11%   |  |
| 3 BR           | 8     | 1088           | 10%   |  |
| Total          | 80    | 713            |       |  |

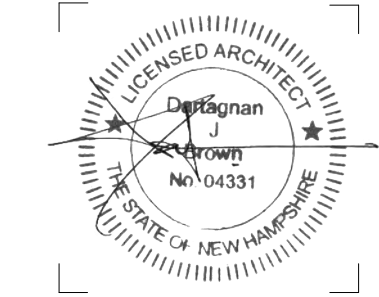
ARCHITECT  
**EMBARC**  
580 HARRISON AVE, SUITE 2W  
BOSTON, MA 02118  
O: 617.765.8000  
www.embarcdesign.com

OWNER  
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MUSE APARTMENTS  
20 SPENCER STREET  
LEBANON, NH  
SITE DEVELOPMENT PLANS

| MARK | ISSUE      | DATE     |
|------|------------|----------|
| 1    | REVISION 1 | 08/26/24 |



DRAWING INFORMATION  
ISSUE: SITE DEVELOPMENT PLANS  
DATE:  
PROJECT #: 23000  
SCALE: 1" = 30'-0"

DRAWING TITLE  
BUILDING PLANS

DRAWING NUMBER  
**A100**  
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1 NORTH ELEVATION  
1/16" = 1'-0"

MEDIUM DENSITY FIBER CEMENT PANEL  
PASSIVE HOUSE COMPLIANT WINDOWS, TYP.

LAP SIDING  
BASIS OF DESIGN:  
CERTAINTED BOARD & BATTEN

AZEK TRIM  
TYP. UON  
LAP SIDING  
BASIS OF DESIGN:  
CERTAINTED CERTAPLANK, TYP. UON

ENTRY SIGN  
ALUMINUM CHANNEL LETTERS W/  
OPAQUE BACK AND ACRYLIC  
FACE, LED LIGHT. SEE LIGHTING  
PLAN L-01 FOR DETAILS

LAP SIDING  
BASIS OF DESIGN:  
CERTAINTED BOARD & BATTEN

W2 LIGHT, SEE LIGHTING PLAN L-01 FOR  
PHOTOMETRICS AND DETAILS, TYPICAL  
ALL BUILDING MOUNTED LIGHTS

PLANTING SHOWN FOR ILLUSTRATIVE PURPOSES  
ONLY, SEE LANDSCAPE DRAWINGS FOR DETAILS

IRON SPOT BRICK BASE

GENERAL NOTES:

- SITEWORK SHOWN FOR COORDINATION PURPOSES ONLY. SEE SURVEY, CIVIL AND LANDSCAPE DRAWINGS FOR SITE INFORMATION AND ADDITIONAL DETAILS.
- FIRE PROTECTION SYSTEMS AND LOCATIONS WILL BE PROVIDED DURING BUILDING PERMIT REVIEW AND COORDINATED WITH THE LOCAL AHI.
- SEE LIGHTING PLAN L-01 FOR LIGHTING INFORMATION
- SOME FACADES SHOWN AT ANGLE, PLEASE SEE PLANS FOR FACADE LENGTH MEASUREMENTS
- AS AN ALL RESIDENTIAL BUILDING, THE FIRST FLOOR WILL BE LESS THAN 12' IN HEIGHT. WAIVER FROM SECTION 307.8.C OF ZONING ORDINANCE WILL BE SOUGHT. UPPER STORIES WILL BE 10'-8" TYPICAL AND IN COMPLIANCE WITH THE ZONING ORDINANCE.



3 SOUTH ELEVATION  
1/16" = 1'-0"

RECESSED LIGHT AT BUILDING ENTRY CANOPY,  
SEE LIGHTING PLAN L-01 FOR DETAILS  
PLANTING SHOWN FOR ILLUSTRATIVE PURPOSES  
ONLY, SEE LANDSCAPE DRAWINGS FOR DETAILS

MEDIUM DENSITY FIBER CEMENT PANEL  
AZEK TRIM AT BASE, TYPICAL UON

MEDIUM DENSITY FIBER CEMENT PANEL  
AZEK TRIM AT BASE, TYPICAL UON  
W1 LIGHT, SEE LIGHTING PLAN L-01  
FOR DETAILS



4 WEST ELEVATION  
1/16" = 1'-0"

EXTERIOR VISITOR BIKE PARKING,  
SEE LANDSCAPE PLANS FOR DETAILS  
W1 LIGHT, SEE LIGHTING PLAN L-01  
FOR DETAILS

PLANTING SHOWN FOR ILLUSTRATIVE PURPOSES  
ONLY, SEE LANDSCAPE DRAWINGS FOR DETAILS



2 EAST ELEVATION  
1/16" = 1'-0"

PLANTING SHOWN FOR ILLUSTRATIVE PURPOSES  
ONLY, SEE LANDSCAPE  
DRAWINGS FOR DETAILS

AZEK TRIM AT BASE, TYPICAL UON  
MEDIUM DENSITY FIBER CEMENT PANEL  
W LIGHT, SEE LIGHTING PLAN L-01  
FOR DETAILS

ARCHITECT  
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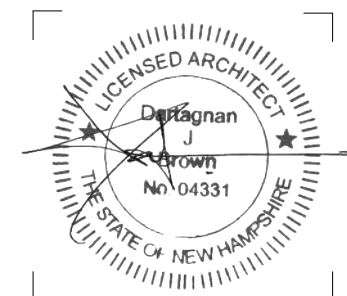
MUSE APARTMENTS

20 SPENCER STREET  
LEBANON, NH

SITE DEVELOPMENT PLANS

REVISIONS

| MARK | ISSUE      | DATE     |
|------|------------|----------|
| 1    | REVISION 1 | 08/26/24 |



DRAWING INFORMATION

ISSUE: SITE DEVELOPMENT PLANS  
DATE:  
PROJECT #: 230000  
SCALE: 1/16" = 1'-0"

DRAWING TITLE

ARCHITECTURAL  
ELEVATIONS

DRAWING NUMBER

**A200**

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**Who?** All LMS families that utilize the car loop at drop-off and/or pick-up.

**What?** A change to the car loop traffic flow during morning drop-off and afternoon pick-up.

**Where?** Cars will now only enter the LMS car loop by making a right-hand turn. Left-hand turns from Moulton Ave into the car loop during morning drop-off (between 7:00 am and 7:30 am) and afternoon pick-up (between 2:00 pm and 2:40 pm) will no longer be permitted. Cars will need to turn either right or left onto Moulton Ave from Prospect Street Extension. Please see the attached maps for further detail.

**Why?** The line of cars that backs up almost daily during drop-off and pick-up times is unsafe due to the fact that it regularly blocks a lane of traffic in at least one direction on Route 4/Dartmouth College Highway. The goal of this change is to provide the safest possible situation for our students and anyone traveling on Lebanon roads. We are hopeful that it will work.

**When?** Starting on the 1st day of school for 2024-2025. Thursday, August 29th.

Questions/Concerns/Comments? Please contact Tom Harkins, LMS Principal, by email at [thharkins@sau88.net](mailto:thharkins@sau88.net) or by phone at 603-448-3056.

\*Thank you for your understanding and cooperation\*

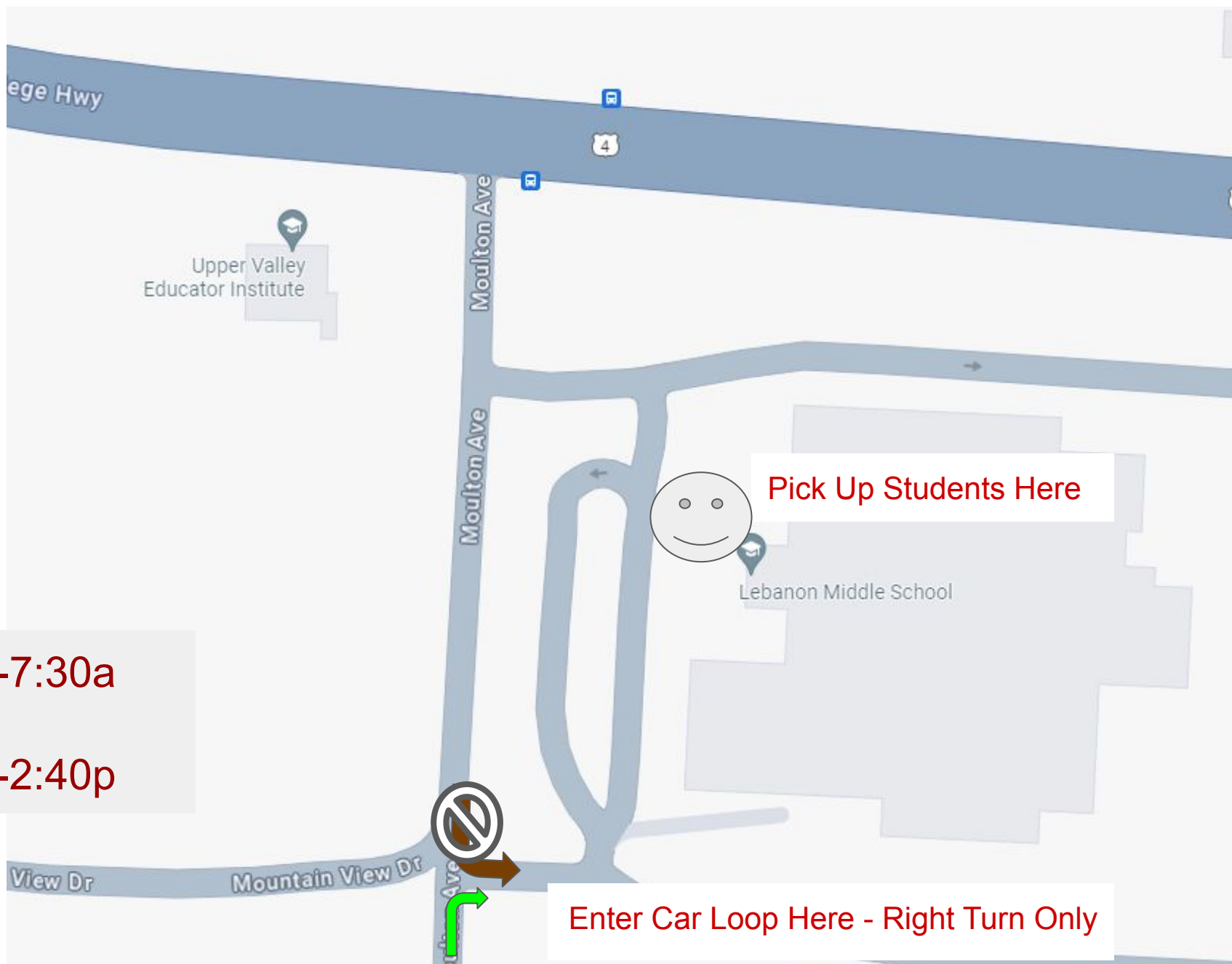




7:00a-7:30a  
and  
2:10p-2:40p

Please be  
cautious of  
pedestrians

\*Please keep in mind that cars  
traveling up the hill on Moulton  
do not have a stop sign. Those  
cars have the right of way.



7:00a-7:30a  
and  
2:10p-2:40p

Pick Up Students Here

Enter Car Loop Here - Right Turn Only

