LEBANON PLANNING BOARD
SEPTEMBER 9, 2024 - 6:30 PM
COMMUNITY ROOM, KILTON LIBRARY OR REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE

1. Call to Order

A. To participate in this meeting, please join live via Microsoft Teams or call 929-229-5356 (access code: 509 501 024#). If you have trouble accessing this meeting, please email tim.corwin@lebanonnh.gov.

2. Notice of Regional Impact

3. Public Hearing Items

A. **XYZ Dairy, LLC, River Park Drive (Tax Map 44, Lots 21 - 30 & Tax Map 44, Lot 7), zoned CBD, IND-L and R-3**: Applicant requests a 2-year extension of the River Park Subdivision approval (PB2011-01-FMAJ) and Site Plan approval (PB2010-25-SPR), as most recently amended on September 9, 2019 (PB2018-34-SPA) and extended on October 12, 2021 (PB2021-29-EXT). **PB2024-34-EXT - Continued from August 12, 2024**
See link to the August 12, 2024 Agenda Packet Here - Additional attachments included with the September 9, 2024 meeting

B. **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 - Continued from August 12, 2024**

C. **Edwards Properties, LLC, 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L:** To allow the conversion of a dwelling unit to an office use, applicant requests (i) a Conditional Use Permit pursuant to Section 303.2 of the Zoning Ordinance to expand the office use approved by Conditional Use Permit on April 15, 2024 (PB2024-02-CUP), and (ii) pursuant to Section 9.1 of the Site Plan Review Regulations, a modification to the site plan approved on April 15, 2024 (PB2024-14-SPR). **PB2024-27-CUPSPA - Postponed from August 12, 2024**

D. **Jennifer Caine Russell & Nick Russell (applicants), Spencer Street Storage, LLC (property owner), 10 Spencer Street (Tax Map 92, Lot 33), zoned LD**: Applicants request a Conditional Use Permit pursuant to Article III, Section 307.2 of the Zoning Ordinance to allow an art studio use within the existing building. **PB2024-37-CUP**

E. **LVM Residential, LLC, 1 Foundry Street (Tax Map 91, Lot 263) and 43 Mechanic Street (Tax Map 106, Lot 34), zoned LD:** Pursuant to Section 9.1 of the Site Plan Review Regulations, applicant requests modifications to a previously approved Site Plan (PB2022-36-SPR & PB2023-38-SPA) for a proposed multi-family housing development. Applicant proposes to reduce the number of dwelling

units from 183 to 148 and to eliminate construction of 2 of the 4 proposed residential buildings, together with related modifications to parking, utilities, landscaping, access, and other site improvements. Applicant also requests a Conditional Use Permit pursuant to Article III, Section 307.9 of the Zoning Ordinance to allow a parking area in the front yard of the lot. **PB2024-35-SPA**

F. **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**

4. Other Business

5. Approval of Minutes

A. August 6, 2024 - Site Walk

B. August 7, 2024 - Site Walk

C. August 12, 2024

6. 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 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.

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

PLANNING BOARD

September 9, 2024 Meeting

Staff Memorandum – PB2024-34-EXT – *con't from 8/12/24*

APPLICATION INFORMATION

Agenda Item: 3.A

Application ID#:
PB2024-34-EXT

Application Type:
Extension

Property Location:
North Main Street,
West Lebanon

Property Owner/Applicant:
XYZ Dairy, LLC

Property Size:
+/-38.18 Ac. (combined tract)

Zoning District(s):
- Central Business District (CBD)
- Light Industrial (IND-L)
- Residential Three (R-3)

Overlay District:
- Wetlands Conservation District
- Flood Plain District

Staff Attachments:
New:
- 9/5/24 e-mail correspondence with applicant

Included with 8/12/24 Planning Board meeting agenda packet:
- Staff memo (7 pages)
- Notice of Action for PB2011-01-FMAJ dated October 11, 2011 (7 pages)
- Notice of Action for PB2018-34-EXT dated September 9, 2019 (17 pages)
- Notice of Action for PB2021-19-EXT dated October 21, 2021 (2 pages)

LEGAL NOTICE

XYZ Dairy, LLC, River Park Drive (Tax Map 44, Lots 21 - 30 & Tax Map 44, Lot 7), zoned CBD, IND-L and R-3: Applicant requests a 2-year extension of the River Park Subdivision approval (PB2011-01-FMAJ) and Site Plan approval (PB2010-25-SPR), as most recently amended on September 9, 2019 (PB2018-34-SPA) and extended on October 12, 2021 (PB2021-29-EXT). PB2024-34-EXT

APPLICATION MATERIALS

New:

- Document titled, "Request for Extension of River Park Approvals Due to Circumstances Beyond the Control of the Applicant," dated August 12, 2024 (8 pages, including a redline of the Notice of Action for PB2021-19-EXT dated October 21, 2021)
  - *Note: the applicant provided hard copies of this document to the Board at the August 12, 2024 meeting*
- Proposed updated phasing schedule, dated September 5, 2024 (1 pg)

Included with 8/12/24 Planning Board meeting agenda packet:

- Application form
- Letter from Chet Clem, Lyme Properties, dated July 8, 2024
- Certified Notification List
- Fee Schedule

STAFF COMMENTS

(see 8/12/24 staff memo for reference)

1. Imprecise Request. *The applicant has addressed this comment with the submission of the attached document titled, "Request for Extension of River Park Approvals Due to Circumstances Beyond the Control of the Applicant," dated August 12, 2024, the last two pages of which includes a redline of the Notice of Action for PB2021-19-EXT dated October 21, 2021.*

2. Subdivision Extension Not Required. *It remains staff's view that an extension to the subdivision approval is not required for the reasons set forth in the staff memo included with the August 12, 2024 agenda packet.*

3. Standard of Review. Per the 9/9/19 Notice of Action, the River Park Site Plan approval is subject to the Site Plan Review Regulations dated May 8, 1977, last revised November 9, 2009. (See staff comment #5 for related discussion). Section 4.10 of the Site Plan Review Regulations last revised 11/9/09 provides as follows:

Section 4.10 - Expiration of Site Plan Approval

A. Any approved site plan for which a Building Permit has not been obtained within one (1) year of the date of the original approval shall be considered void, unless the Board grants an extension for good cause. A request for an extension of the site plan approval shall be submitted by the applicant to the Planning Office prior to such expiration date. Requests for extension of the site plan approval received after the expiration date shall not be considered by the Board. An extension shall be for up to one (1) additional year beyond the original expiration date. The Board shall grant no more than one extension for any site plan. (NOTE: The expiration provisions of this paragraph shall not be waivable under the procedures set forth in Article VII - "Waiver Procedures" of these Regulations; however, the Planning Board may, for good cause stated in its written Notice of Action, specify some alternative expiration date.)

B. For applications subject to both Site Plan and Subdivision review, expiration of Board approvals shall occur as set forth in the Subdivision Regulations.

C. For approved phased developments, the deadlines for each phase, as stated in the approved phasing schedule, shall be substituted for the one-year limitation period set forth in Section 4.10(A).

As set forth in Section 4.10, the Board may grant an extension "for good cause." (See Section 4.10.A above). Additionally, extension requests for the River Park development must also comply with and must be considered in light of the standards set forth in Conditions 3 and 29 of the 9/9/19 Notice of Action, which provide as follows:

- Condition 3: "In determining whether to grant any requested extensions, **the Board shall consider the totality of the circumstances, including the extent and complexity of the conditions-precedent, and whether the need for more time is attributable to circumstances beyond the control of the applicant, rather than to the applicant's neglect or failure to proceed with reasonable promptness**." (emphasis added)

- Condition 29: "It is the intent and effect of this approval […] that upon completion of the Phase 1 infrastructure improvements within 5 years of the final subdivision approval […] the subdivision as a whole, including all phases, shall vest as provided in RSA 674:39, II […] provided that the applicant and its successors-in-interest continue to comply with all conditions of this approval and of the Planning Board's approval of Final Major Subdivision application #PB2011-01-FMAJ, including the time limits set forth in the phasing plan, **unless such a limit is extended for good cause by the Planning Board**, acting upon an application submitted prior to the expiration of such limit." (emphasis added)

4. Application Deficiency. *The applicant has addressed staff's comment, in part, by providing written testimony addressing the extension criteria identified in staff comment 3 above. See the attached document titled, "Request for Extension of River Park Approvals Due to Circumstances Beyond the Control of the Applicant," dated August 12, 2024.*

With respect to the status of the updated phasing schedule that is required to be submitted per condition 3 of the 9/9/19 Notice of Action, please see attached 9/5/24 correspondence with the applicant and the attached updated phasing schedule, dated September 5, 2024 (which was submitted by the applicant via e-mail to staff on 9/5/24).

5. Regulatory Changes. *Staff recommends that the Board only consider this comment if it finds that the applicant has met the standard of review for an extension request (see staff comment 3 above).*

6. Impact Fees. *Staff recommends that the Board only consider this comment if it finds that the applicant has met the standard of review for an extension request (see staff comment 3 above).*

7. Clarification of Approved Plan Set. *Staff recommends that the Board only consider this comment if it finds that the applicant has met the standard of review for an extension request (see staff comment 3 above).*

Attachments

cc: Chet Clem, Lyme Properties (via e-mail)
David Clem, XYZ Dairy, LLC (via e-mail)
Christine Johnston, Esq. (via e-mail)
File

Tim Corwin

From: Tim Corwin
Sent: Thursday, September 5, 2024 9:42 PM
To: 'Chet Clem'
Cc: Hastings Philip
Subject: RE: [EXTERNAL] Fwd: PB2024-34-EXT_Updated Phasing Plan
Attachments: RE: River Park - Draft Motion/Conditions of Approval

Chet –

I reviewed your e-mail. As we know, per condition of approval 3 of the 9/9/19 NOA and Section 4.9.E of the 2009 Site Plan Review Regulations (which condition 3 references), an updated phasing schedule must be submitted together with any extension request. With respect to meeting this requirement, the chart that you provided in your e-mail below is a great start – thank you. It appears that the chart provides the commencement dates for each phase (as required by condition 3) and the deadlines for the construction of improvements (as required by condition 29 as well as Section 4.9.C.3 of the Site Plan Regs). The chart just needs to be expanded to also include the improvements information required by 4.9.C.1, the security posting deadlines required by 4.9.C.2, and the building permit deadlines required by 4.9.C.4.

Just a few background comments in response to some of the points you make in your e-mail below:

- I appreciate and understand the distinction you're making between the phasing "plan" and "schedule". However, it is not a distinction found in the Site Plan Regs which make no mention of a "phasing plan" and only uses the term "phasing schedule". Consequently, I've been using the terms "phasing plan" and "phasing schedule" interchangeably since the Site Plan Regs make no distinction. Indeed, the regs contemplate a single phasing schedule, not a phasing schedule with a separate phasing "plan". Having said that, if you feel there is utility in providing a phasing "plan" separate from the required phasing schedule, staff has no objection. However, please bear in mind that the updated phasing schedule will be partially redundant of the River Park phasing "plan" since the phasing schedule must include information that is already included on the River Park phasing "plan" (i.e. the River Park phasing "plan" identifies the improvements to be constructed with each phase, which is also information that is required to be included within the phasing schedule. See Section 4.9.C.1).

- In every case, it is the applicant's responsibility to provide a phasing schedule that meets the requirements of the site plan regs (i.e. it is the applicant's responsibility to demonstrate compliance with the phasing schedule requirements of Section 4.9.C). I'm not aware of any waivers that have been requested or granted for the River Park project relative to the Section 4.9.C phasing schedule requirements. Consequently, it's not clear why a compliant phasing schedule wasn't previously provided (for this application and prior applications), nor is it clear why a compliant phasing plan hasn't apparently been *required* to be submitted. Staff shares historical responsibility for this oversight. However, it is staff's recommendation that the oversight be corrected and that the updated phasing schedule that's required to be submitted pursuant to condition 3 and pursuant to Section 4.9.E should comply with the phasing schedule requirements of Section 4.9.C.

- Please note that an ongoing concern of staff's is the disparate favorable treatment that River Park has received relative to other approved developments and relative to the requirements of the Board's site plan and subdivision regulations. All applicants need to be treated as equally as reasonably possible, and it's not clear, for example, why River Park was not required to satisfy Section 4.9.C when other developments have. Having said that, an applicant may apply for a waiver from any one or more of the applicable site plan

review regulations. If you'd like to seek a waiver in this case from all or part of Section 4.9.C, you have the option of doing so by preparing and submitting an application for waivers form and demonstrating compliance with the applicable waiver criteria as set forth in the Site Plan Regs.

Also, just a very minor comment/question: you note below that the reference to Section 4.9.E in condition of approval #3 of the 9/9/19 Notice of Action is incorrect and should instead refer to Section 4.9.F. However, I believe the Section 4.9.E reference was intentional since there is no Section 4.9.F in the 2009 Site Plan Review Regulations. Consequently, I don't understand your comment. If you could please clarify so I can address your concern, I'd greatly appreciate it.

Finally, in your e-mail below you state that the Planning & Development Department wrote certain conditions of approval. I'm not sure to what extent that matters or is relevant to the extension request, but to the extent it is, I think it's important to point out that the preparation of the draft motion for PB2018-34-SPA was very much a collaborative effort between Planning staff and the applicant. For example, please see attached correspondence from August 2019 by and between staff and the applicant and the applicant's legal counsel regarding preparation of the draft motion. This collaborative effort is another example of staff trying to work with and accommodate the River Park applicant in a manner that is, in my view, unparalleled with respect to any other applicant or development application – at least with respect to those I am aware of.

Thank you Chet. If you have any questions or would like to discuss, please don't hesitate to let me know. Please note that I will include a copy of this e-mail chain with the agenda packet for the 9/9 Planning Board meeting so the Board is aware of our discussion. -Tim

Tim Corwin, AICP
Deputy Planning and Development Director
City of Lebanon
(603) 448-1524 (Office)
(603) 442-6127 (Direct)
Tim.Corwin@LebanonNH.gov
Book a time to meet with me

From: Tim Corwin
Sent: Thursday, September 5, 2024 12:42 PM
To: Chet Clem <chet@lymeproperties.com>
Subject: RE: [EXTERNAL] Fwd: PB2024-34-EXT_Updated Phasing Plan

Chet –

Thank you. To clarify, we only hold staff review meetings for applications that would benefit from technical review by the city engineer, building inspector, police department, and/or fire department. Many applications that come before the Planning Board – generally including extension requests – do not require technical staff review.

Also, we endeavor to be consistent as possible, but it's not uncommon to miss or misunderstand something during the course of a prior review that is then noticed/discovered/clarified in reviewing a subsequent application. -Tim

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From: Chet Clem <chet@lymeproperties.com>
Sent: Thursday, September 5, 2024 11:57 AM
To: Tim Corwin <Tim.Corwin@lebanonnh.gov>; Crystal Taplin <Crystal.Taplin@lebanonnh.gov>
Cc: Philip Hastings <hastingsp@cwbpa.com>; Angela McCanna <angela@lymeproperties.com>
Subject: [EXTERNAL] Fwd: PB2024-34-EXT_Updated Phasing Plan

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Tim,

Of note, none of this was required in #PB2021-34-EXT, which was the basis for my expectation when submitting the application this time.

The extension request was made by XYZ, a discussion was had with the Planning Board at the first schedule hearing, and the Planning & Development Staff subsequently completed the red-line of the dates for the Notice of Action.

We received no material communication from the Planning Department subsequent to the Application submission on July 8, 2024– in the form of Staff Review and Initial Completeness Determination (SPRR Section 4.7.C.3.a-b), a Staff Meeting, or via email, as has been customary in the past. We relied upon the communication from Crystal Taplin on July 9, 2024 that "we will not be holding a staff review meeting and we will email you any comments."

This is a matter of adding "2" to each deadline, just as it was previously in #PB2021-34-EXT. I've attached an updated Phasing Schedule chart herein for ease of reference.

Responses to your specific items below in blue.

Chet

From: Tim Corwin <Tim.Corwin@lebanonnh.gov>
Subject: PB2024-34-EXT_Updated Phasing Plan
Date: August 13, 2024 at 8:35:50 PM EDT
To: Chet Clem <chet@lymeproperties.com>
Cc: Crystal Taplin <Crystal.Taplin@lebanonnh.gov>

Chet –

In addition to the information provided in the handout you distributed at last night's Planning Board meeting (attached), it is staff's view that the Phasing Plan found on page 5 of the 9/9/19 Notice of Action for PB2018-34-SPA (attached) needs to be updated per Conditions 3 and 29, as discussed in Staff Comment 4 of the staff memo included in the 8/12/24 Planning Board meeting agenda packet:

> Moreover, per condition of approval 3 of the 9/9/19 Notice of Action, the applicant must provide an updated phasing ~~plan~~ **schedule** (edits added) in connection with any extension request: "If the applicant anticipates being unable to meet any time deadline(s) set forth in this decision with respect to any phase(s), the applicant shall submit an **updated phasing schedule** (emphasis added) to the Planning Board for review and approval in accordance with Section 4.9.E of the Site Plan Review Regulations." (emphasis added). An updated phasing plan as required by condition 3 has not been provided. The current phasing plan is found on page 5 of the 9/9/19 Notice of Action.

This reference is a mistake and should refer to Section 4.9.F.

Condition 3 requires an updated Phasing Schedule not a Phasing Plan as you seek to require here and in the Staff Memo.

As referenced on Page 2 of the August 12, 2024 handout, there is no change to the Phasing Plan. The only change requested is a 2-year extension to each item the Phasing Schedule, same as was applied for and granted by the Planning Board in #PB2021-34-EXT.

In #PB2021-34-EXT, there was no change to– nor re-submission required– of the so-called "New Phasing Plan" as approved in #PB2018-34-SPA.

The proposed updates to the Phasing Schedule were included in the August 12, 2024 handout, and, as was the case in #PB2021-34-EXT, is simple arithmetic. Phasing Schedule chart included for reference.

Note that the updated phasing plan must include the following:

- *Commencement dates for each phase*. [See condition 3: "For purposes of this decision, **the commencement dates referenced on the New Phasing Plan** and in this decision shall be deemed to be the date by which a Building Permit shall have been applied for[.] (emphasis added)]

The commencement dates for each Phase are already spelled out in each corresponding condition in the PB2018-34-SPA written by the Lebanon Planning & Development Department (Conditions 14-2, 15-1, 16-1, 17-1, 18-1, 19-1, 20-1, 21-1, 26, and 29). Those dates are the requested changes, as included on Pages 5 and 6 of the 8/12/2024 packet. Again, the same format as granted by the Planning Board in #PB2021-34-EXT.

- *Deadlines for the construction of improvements for each phase*. (See condition 29: "As set forth in Section 4.10(C) of those Regulations, the deadlines for the construction of improvements within each phase shall be as stated in the approved phasing plan[.]").

The deadlines for completion ("…shall be completed within [2 or 5] years of commencement") are already spelled out in Conditions 14-2, 15-1, 16-1, 17-1, 18-1, 19-1, 20-1, 21-1, 26, and 29 of the PB2018-34-SPA written by the Lebanon Planning & Development Department.

If you could please submit an updated Phasing Plan as required by Conditions 3 and 29 of the 9/9/19 Notice of Action by the end of the day on Tuesday, September 3rd, that will allow us to include it in the agenda packet for the Board's 9/9/19 meeting.

Again, the Phasing *Plan* does not change. The updated Phasing *Schedule* dates were included in the packet on 8/12/2024, and in the chart here-in.

As further set forth in Staff Comment 4 of the staff memo included in the 8/12/24 Planning Board meeting agenda packet, please note that staff is also recommending that the Board require the updated phasing plan to conform to all of the required phasing plan criteria as set forth in Section 4.9.C of the Site Plan Review Regulations. (As noted in the staff memo, it is not clear how the phasing plan was approved originally without compliance with the required phasing plan criteria). The current phasing plan (attached) is deficient with respect to the bolded criteria below (i.e. 4.9.C.2, 3 and 4):

C. The applicant shall submit with the application a proposed phasing schedule, which shall be included as part of any approval. The phasing schedule shall include the following information, for each phase:

1. A specification of all improvements, on-site or off-site, to be installed as part of that phase;

No change, addressed in Conditions of Approval.

2. **A deadline for the posting of any required security for that phase;**

Security will be posted ahead of each phase in compliance with Section 8.3 of the Site Plan Regulations, which makes no reference to a specific deadline requirement.

3. **A deadline for the completion of such improvements subsequent to the posting of such security, and;**

Deadlines addressed above in response to Bullet #2.

4. **A date by which a Building Permit must be obtained to prevent the approval for that phase from being considered void pursuant to Section 4.10 of these Regulations.**

Condition 3 addresses this: "For purposes of this decision, the commencement dates referenced on the New Phasing Plan and in this decision shall be deemed to be the date by which a Building Permit shall have been applied for with stamped construction drawings prepared by a licensed architect and engineer for that phase, pursuant to Section 4.9.C(4) of the Site Plan Review Regulations, and the phasing deadline is tolled until the Building Permit is issued."

Please consider adding the information in bold above to the updated Phasing Plan (note that 4.9.C.3 is already required to be included in the update Phasing Plan per condition 29 of the 9/9/19 Notice of Action).

Again, the deadlines for completion are already spelled out in Conditions 14-2, 15-1, 16-1, 17-1, 18-1, 19-1, 20-1, 21-1, 26, and 29 to the satisfaction of 4.9.C.3.

Thank you Chet. If you have any questions or would like to discuss, please let me know. -Tim

Tim Corwin, AICP
Deputy Planning and Development Director
City of Lebanon
(603) 448-1524 (Office)
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Tim.Corwin@LebanonNH.gov
Book a time to meet with me

****UPCOMING PTO: 8/16 – 9/3****

Request for Extension of River Park Approvals

Due to Circumstances Beyond the Control of the Applicant

River Park West Lebanon • August 12, 2024 • PB2024-34-EXT

Staff Comment #1: Proposed Phasing Schedule (Phasing Plan remains same)

Copied from 2021 Extension (PB2021-29-EXT). 2024 Extension Dates

Request: extend each deadline contained in the Site Plan Approvals 2 years, using the same format as was granted 2021 as reflected in that Notice of Action as previously prepared by Planning Department.

The delays incurred in 2023 and 2024 (Page 5) have now made it impossible for River Park to meet the current deadlines in the approvals.

No material change (other than missed item below) from 2021, no reason to believe this doesn't meet the City's standards.

Only change from 2021: The timing of Condition 7d was missed in the 2021 Extension. This proposes adjusting by 4 years to re-sync with original approval schedule.

7d. The temporary parking identified in Exhibit A may be used until such parking is replaced by the permanent parking garage included in Phase 3 or December 31, 2038, whichever is earlier. **2042**

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CITY OF LEBANON ~ PLANNING & DEVELOPMENT

NOTICE OF ACTION
LEBANON PLANNING BOARD

Notice is hereby given that on [redacted], the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

[redacted] moved that the Lebanon Planning Board finds the application of XYZ Dairy, LLC for an extension of the timelines set forth in the Planning Board Notice of Action dated September 9, 2019 (PB2018-34-SPA) for the commencement of construction and completion of the River Park development, (PB2024-34-EXT) is complete enough to accept jurisdiction and commence review.

The motion was seconded by [redacted] The vote on the motion was [redacted]

Notice is hereby given that on [redacted], the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

7d. The temporary parking identified in Exhibit A may be used until such parking is replaced by the permanent parking garage included in Phase 3 or December 31, ~~2038~~, **2042** whichever is earlier.

14-2. The construction of Phase 1 infrastructure improvements, which commenced in 2018, shall be completed within ~~5~~ **9** years from the date of the Planning Board's final subdivision approval, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

15-1. As proposed by the applicant, the construction of Phase 1-A improvements shall commence before the end of ~~2023~~ **2027** and shall be completed within 2 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

16-1. As proposed by the applicant, the construction of Phase 1-B improvements shall commence before the end of ~~2024~~ **2028** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

17-1. As proposed by the applicant, the construction of Phase 2 infrastructure improvements shall commence before the end of ~~2026~~ **2030** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

18-1. As proposed by the applicant, the construction of Phase 3 improvements shall commence before the end of ~~2028~~ **2032** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

51 NORTH PARK STREET, LEBANON, NEW HAMPSHIRE 03766
TEL: 603-448-1457 FAX: 603-442-6141 WWW.LEBANONNH.GOV

Staff Comment #2: Subdivision Extension

Condition 14-2 from PB2018-34-SPA

The River Park Subdivision was recorded on January 2, 2018, on the condition that the Phase 1 infrastructure improvements be completed within 5 years of the Planning Board's approval.

The original January 2, 2023 completion date (5 years) was extended by PB2021-29-EXT to **7 years,** or January 2, 2025.

Due to delays and ongoing issues at Municipal and State level, we will now be unable to complete the Phase 1 Improvements by January 2, 2025.

Per Condition 14-2, we are requesting an extension of time for such build-out from the Planning Board, prior to the expiration of this limit.

> 2. Subdivision Extension Not Required. In addition to an extension of the Site Plan approval, the applicant has also requested an extension to the subdivision approval. Condition of approval #14 of the 10/11/11 Notice of Action for the Subdivision approval provides as follows: "The applicant acknowledges that the overall build-out of the River Park development will occur in seven (7) phases over an extended period of time in accordance with the application materials submitted to the Planning Board for Site Plan application (#PB2010-25-SPR)." Consequently, because the timeframes associated with the River Park development are per the Site Plan approval, it is not clear why the applicant is requesting an extension of the Subdivision approval. The last extension granted for the Subdivision was in 2017, and that extension was specifically to allow additional time for the plat to be recorded (which was accomplished on January 2, 2018). In other words, once the subdivision plat was recorded, the timelines in the subdivision approval were satisfied. (By way of background, note that the plat was recorded even though the conditions of the Subdivision approval had not been fully satisfied – most notably, without providing security for the completion of the infrastructure improvements. In lieu of completing the conditions of approval, a "Notice of Restriction" was recorded with the plat. This was done based on questionable legal advice from the City's legal counsel in an effort to accommodate the applicant.)[1]

Staff Memo PB2024-34-EXT, Page 3 of 7

> 14-2. The construction of Phase 1 infrastructure improvements, which commenced in 2018, shall be completed within ~~5~~ 7 years from the date of the Planning Board's final subdivision approval, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

Notice of Action, PB2021-29-EXT

Staff Comment #3: Standard of Review

Previous River Park Extensions

This is <u>not</u> the **6th** extension request, as the Staff Memo claims. The four (4) previous extension requests were granted by the Planning Board due to similar issues beyond the control of XYZ.

2013: NHDOT
2015: NHDOT
2016: Municipal Delays
2021: Covid-19

	Date	NOA	Details
	October 11, 2011	PB2011-01-FMAJ	Final Major Subdivision Application Approved at Planning Board
4-Year NHDOT	October 24, 2011	PB2010-25-SPR	Site Plan Review Approved at Planning Board
	September 9, 2013	PB2013-21-EXT	Planning Board Approves Site Plan Extension
		PB2013-22-EXT	Planning Board Approves Site Plan Extension
	January 30, 2015	NHDOT	River Park Secures NHDOT Driveway Approvals. Application submitted on March 1, 2011
	June 8, 2015	PB2015-10-SPA	Eliminate two bridges on River Park Drive, CAE sidewalk changes, 100 footprint Approved at PB
	November 9, 2015	PB2015-33-EXT	Planning Board Approves Site Plan Extension
		PB2015-34-EXT	Planning Board Approves Subdivision Extension
	2016 Construction Initiation Suspended		Municipal Delays
	November 14, 2016	PB2016-28-EXT	Planning Board Approves Subdivision Extension and Site Plan
		PB2015-34-EXT	(PB2016-28-EXT references PB2015-34-EXT in Site Plan extension decision)
	October 10, 2017	PB2017-17-AAD	XYZ successfully Appeals Administrative Decision to Planning Board
	December 20, 2017	*Subdivison*	Subdivision Plat Finalized with City
	January 2, 2018	*Subdivison*	Subdivision Mylars Recorded at Grafton County Registry
	2018 Construction Initiation Suspended		Municipal Delays
	October 9, 2018	*n/a*	Phasing changes (to expedite housing as requested by City Manager) submitted to Planning Board
	September 9, 2019	PB2018-34-SPA	Site Plan Phasing Changes Approved after 11 months, 4 hearings.
	2020 Construction Initiation Suspended		April, 2020 COVID-19 Emergency Order
	October 12, 2021	PB2021-19-EXT	Planning Board Approves 2-Year extension
	2022-23 Construction Initiation Suspended		BCBA2023-01
	August 3, 2023	n/a	Communication to Planning Department: Construction efforts resuming following BCBA
	January 5, 2024	n/a	Communication to Planning Department: Pursuing Spring 2024 construction start
	June 7, 2024	n/a	Following 5/6/24 BCBA decision, Excavation Permits filed with City/State
	2024 Construction Efforts Delayed		BCBA2024-01, NH BCRB, NHDOT

Staff Comment #4: Application Deficiency

Circumstances beyond the control of the applicant + good cause

"[T]he need for more time is attributable to circumstances beyond the control of the applicant, rather than to the applicant's neglect or failure to proceed with reasonable promptness." (9/9/19 Notice of Action, condition #3)

There is "good cause". (9/9/19 Notice of Action, [Condition #29])

Issue #1: 1 River Park Building Permit (#2016-00293) was invalidated by Lebanon Planning Department on Feb. 1, 2024. This unexpected action up-ended six months of work (see Page 6), direct costs in excess of $220,000, and contractual obligations in excess of $650,000 that River Park had incurred toward restarting the project following 2023 delays.

The Staff's decision was overturned by the Lebanon Building Code Board of Appeals on May 6, 2024. On June 6, 2024 the Planning Department chose to appeal to the NH Building Code Review Board. On July 31, 2024 the NH BCRB overturned the BCBA and remanded the issue back to Lebanon. *This matter is ongoing and unresolved*.

Issue #2: After BCBA decision on 5/6/24 (94 days), River Park restarted project and filed Excavation Permit for Phase 1 Infrastructure with City of Lebanon on June 5, 2024. Staff comments on corresponding Performance Bond / Security Agreement were not received until July 25, 2024. *This matter is ongoing and unresolved*.

Issue #3: Following months of meetings, Excavation Permit for Route 10 was filed with NH DOT on June 5, 2024. On July 15, 2024, NH DOT responded with the surprise demand that new/additional Traffic Analysis be conducted. *This matter is ongoing and unresolved*.

These delays are beyond our control, costly to defend against, and time-consuming. These actions have jeopardized lease negotiations, delayed the intended commencement of work (originally April, delayed until July), and have made it impossible for XYZ Dairy, LLC to meet the current deadlines in the River Park approvals.

There is good cause for the Approvals to be extended by the Lebanon Planning Board.

Work on 1 River Park • Permit #2016-00293

Since July 11, 2023 Building Code Board of Appeals (Page 67 of 148)

Taken from April 1, 2024 BCBA Presentation. Events that transpired from April 1 to Present can be detailed upon the Board's request.

June 1, 2023 – River Park meets with Engelberth Construction prior to first BCBA2023-01 hearing.

June 27, 2023 – Elkus Manfredi delivers Code Review.

July 11, 2023 – Building Code Board of Appeals determines Permit #2016-00293 is Active, 224 days after commencement.

July 17, 2023 – Meeting with Engelberth Construction to discuss how/if we could salvage the construction season after 7 months of delay dealing with Permit issue.

July 31, 2023 – Re-engaged Elkus Manfredi Architects, AHA Engineers, TF Moran Engineers, McNamara Salvia Engineers and requested updated contracts.

August 3, 2023 – Emailed City requesting permission to connect temporary bypass line under Means and Methods of Building Permit as had been approved by the State of New Hampshire.

August 4, 2023 – City rejects solution, requires meeting with DPW and additional engineering work to be completed...work that is only relevant to the permanent solution that isn't required to be done until the Building is completed.

August 17, 2023 – On-site meeting with DPW. Audio recording in keeping with City Manager's new policy that all communications with Lyme Properties are to be recorded.

August 21, 2023 – Meeting with Engelberth Construction, decide it is procedurally unlikely project can re-commence on-time given pipe issue, and would incur additional cost of Winter Conditions.

September 12, 2023 – In parallel matter, Planning Staff reaffirms that "unpermitted site improvements" are in violation of the River Park Site Plan. River Park/Lyme put at liability risk, closing site to public access.

September 26, 2023 – Round Hill Fence Co. adjusts River Park construction fence to secure the project site, and to enable Phase 1 Infrastructure (Route 10 entrance road, Municipal Stormwater solution, etc.) to be completed.

- Planning Staff argued against River Park's proposed 2023 Amendments that would have allowed project to proceed in a more efficient manner.

October 1, 2023 – XYZ authorizes Elkus Manfredi to do another Code Report for any updates to 1 River Park plans, as City had been promised.

October 6, 2023 – XYZ executes updated Elkus Manfredi Architectural Services contract...for the fourth time.

October 16, 2023 – Lease Proposal and Letter of Intent to prospective Life Science tenant interested in entire Third Floor.

December 13, 2023 – Code Report delivered.

December 29, 2023 – Elkus Manfredi sends proposal for updating drawings.

January 5, 2024 – Prior to 180 days from 7/11/2023, Lyme submits update memo to Lebanon Building Inspector:

"We have named Engelberth Construction as our Construction Manager, and along with Elkus Manfredi Architects and the rest of the project team are working toward the Spring, 2024 construction season."

January 26, 2024 – Lyme and AHA Engineers communicate with City of Lebanon DPW about updated water flow data.

January 29, 2024 – Teleconference with Elkus Mandredi to update and finalize Building Interiors.

February 1, 2024 – Travel to Massachusetts to meet with prospective tenant.

February 1, 2024 – Lebanon Planning Department sends Expiration and Invalidation Memo, outlines options to appeal, and directs Lyme to direct any questions to the City Attorney.

February 29, 2024 – XYZ/Lyme files Appeal.

April 1, 2024 – Building Code Board of Appeals Hearing on BCBA2024-01.

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

NOTICE OF ACTION
LEBANON PLANNING BOARD

Notice is hereby given that on [redacted], the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

[redacted] moved that the Lebanon Planning Board finds the application of XYZ Dairy, LLC for an extension of the timelines set forth in the Planning Board Notice of Action dated September 9, 2019 (PB2018-34-SPA) for the commencement of construction and completion of the River Park development, (PB2024-34-EXT) is complete enough to accept jurisdiction and commence review.

The motion was seconded by [redacted] The vote on the motion was [redacted]

Notice is hereby given that on [redacted], the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

7d. The temporary parking identified in Exhibit A may be used until such parking is replaced by the permanent parking garage included in Phase 3 or December 31, ~~2038~~, **2042** whichever is earlier.

14-2. The construction of Phase 1 infrastructure improvements, which commenced in 2018, shall be completed within ~~5~~ **9** years from the date of the Planning Board's final subdivision approval, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

15-1. As proposed by the applicant, the construction of Phase 1-A improvements shall commence before the end of ~~2023~~ **2027** and shall be completed within 2 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

16-1. As proposed by the applicant, the construction of Phase 1-B improvements shall commence before the end of ~~2024~~ **2028** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

17-1. As proposed by the applicant, the construction of Phase 2 infrastructure improvements shall commence before the end of ~~2026~~ **2030** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

18-1. As proposed by the applicant, the construction of Phase 3 improvements shall commence before the end of ~~2028~~ **2032** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

19-1. As proposed by the applicant, the construction of Phase 4 improvements shall commence before the end of ~~2030~~ **2034** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

20-1. As proposed by the applicant, the construction of Phase 5 improvements shall commence before the end of ~~2032~~ **2036** and shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

21-1. As proposed by the applicant, the construction of Phase 6 improvements shall commence before the end of ~~2035~~ **2039** shall be completed within 5 years of commencement, unless the applicant requests and receives an extension of time for such build-out from the Planning Board.

26. In accordance with the City's Impact Fee Ordinance fee schedule adopted on September 13, 2010, this application is exempt from impact fees for a period of 5 years from the date of the Planning Board's final approval. Building permits obtained after the 5-year period shall be subject to impact fees in existence at the time of the Building Permit application submission. [Note: The River Park subdivision plat (#PB2011-01-FMAJ) was recorded on January 2, 2018, representing the final approval for the subdivision and starting the 5-year exemption period~~, which~~. **The 5-year exemption period** shall **now** expire on January 2, ~~2023~~ **2027**]

29. Effect of Approval. This approval is a final, conditional site plan approval for a "phased development" under Section 4.9 of the Site Plan Review Regulations and is a final decision of the Planning Board for purposes of RSA 677:15, I. As set forth in Section 4.10(C) of those Regulations, the deadlines for the construction of improvements within each phase shall be as stated in the approved phasing plan, rather than the 1-year period under Section 4.10(A). It is the intent and effect of this approval, subject to the satisfactory completion of the financial security requirements set forth in Condition #5 of the Final Major Subdivision approval (#PB2011-01-FMAJ) for the development, that upon completion of the Phase 1 infrastructure improvements within ~~5~~ **9** years of the final subdivision approval, as set forth in Condition #14-2 above, the subdivision as a whole, including all phases, shall vest as provided in RSA 674:39, II, and no subsequent changes in subdivision regulations, site plan regulations, or zoning ordinances, except impact fees adopted pursuant to RSA 674:21 and 675:2-4, shall operate to affect this phased development, provided that the applicant and its successors-in-interest continue to comply with all conditions of this approval and of the Planning Board's approval of Final Major Subdivision application #PB2011-01-FMAJ, including the time limits set forth in the phasing plan, unless such a limit is extended for good cause by the Planning Board, acting upon an application submitted prior to the expiration of such limit.

The motion was seconded by [redacted] The vote on the motion was [redacted]

THE CITY OF LEBANON

By: [redacted] DATE: [redacted]
Planning Board Chair

[redacted]

9/5/24		*Current*		*Proposed*	
RPWL Phase	**Condition of Approval (PB2018-34-SPA)**	**Commencement Deadline**	**Completion Deadline**	**Commencement Deadline**	**Completion Deadline**
Phase 1 Infrastructure	14-2, 29	*underway*	1/2/25	*underway*	1/2/27
1	14-2	12/31/24	12/31/26	12/31/26	12/31/28
1-A	15-1	12/31/25	12/31/27	12/31/27	12/31/29
1-B	16-1	12/31/26	12/31/31	12/31/28	12/31/33
2	17-1	12/31/28	12/31/33	12/31/30	12/31/35
3	18-1	12/31/30	12/31/35	12/31/32	12/31/37
4	19-1	12/31/32	12/31/37	12/31/34	12/31/39
5	20-1	12/31/34	12/31/39	12/31/36	12/31/41
6	21-1	12/31/37	12/31/42	12/31/39	12/31/44
Impact Fees	26	n/a	1/2/25	n/a	1/2/27

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

PLANNING BOARD

September 9, 2024 Meeting

Staff Memorandum – PB2024-27-SPACUP

APPLICATION INFORMATION

Agenda Item: 3.C

Application ID: PB2024-27-SPACUP

Application Type:
Conditional Use Permit and Site Plan Amendment to allow the conversion of a dwelling unit to accessory storage space

Property Location & Tax Map:
135 Heater Road (Tax Map 78, Lot 41)

Applicant/Property Owner:
Edwards Properties, LLC

Zoning District: Light Industrial (IND-L)

Future Land Use Map: Mixed Use

Property Size (per City Assessor):
+/-.35 acres (15,246 sq. ft.) *(the property is non-conforming to the minimum 2-acre lot size required in the IND-L District per §303.3 of the ZO)*

Existing Improvements and Use:
1,700 sq. ft. (net) two (2)-story two-family dwelling constructed in 1950 (*per City Assessing records)* with an attached 528 sq. ft. garage

Proposed Use:
- *Per prior Conditional Use Permit and Site Plan approvals (PB2024-02-CUP & PB2024-14-SPR):* A mixed use building with a two-bedroom dwelling unit and an office with accessory warehouse space
- *Per current application:* The entire building is proposed for an office use and accessory office storage use

Overlay Districts:
Wetlands Conservation District

Staff Attachments:
- Notices of Action for PB2024-02-CUP & PB2024-14-SPR

LEGAL NOTICE

Edwards Properties, LLC, 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L: To allow the conversion of a dwelling unit to an office use, applicant requests (i) a Conditional Use Permit pursuant to Section 303.2 of the Zoning Ordinance to expand the office use previously approved by Conditional Use Permit on April 15, 2024 (PB2024-02-CUP), and (ii) pursuant to Section 9.1 of the Site Plan Review Regulations, a modification to the site plan approved on April 15, 2024 (PB2024-14-SPR). PB2024-27-SPACUP

PLANS AND APPLICATION MATERIALS

- Application form (**pg 1 of 13** of the application materials attachment)
- Letter dated June 10, 2024, from Daniel Nash, PE, of Advanced Geomatics & Design (project description; **pg 2**)
- Parking calculations table dated 6/6/2024 (**pg 3**)
- Memo dated June 10, 2024, from Daniel Nash, PE, of Advanced Geomatics & Design (application fees; **pg 4**)
- Certified Notification List (**pg 5**)
- Application for Conditional Use Permit Support Statement for proposed accessory office storage use (**pgs 6-8**)
- Cover sheet from plan set titled, "135 Heater Road," prepared by Advanced Geomatics & Design, dated 01/30/2024, last revised 7/01/2024, PN: 23-017 (**pg 9**)
- Site Plan sheet from plan set titled, "135 Heater Road," prepared by Advanced Geomatics & Design, dated 01/30/2024, last revised 7/01/2024, PN: 23-017 (**pg 10**)
- Floor plans dated 6 June 2024 (**pgs 11-13**)

COMPLETENESS REVIEW

In order to accept jurisdiction and commence review of the applicant's proposal, the Planning Board must first determine that the application is complete. See NH RSA 676:4, I(c)(1) and Section 4.7.C.3 ("Initial Completeness Determination") of the Site Plan Review Regulations. The Planning and Development Department has reviewed the application for compliance with the Site Plan Review Regulations and recommends that the Board find that the application is complete enough to accept jurisdiction and to commence review.

BACKGROUND & APPLICATION OVERVIEW

The property is located within the IND-L District on the south side of Heater Road and abuts the Hypertherm facility to the rear. The property is currently improved with a two (2)-story, two-family dwelling constructed in 1950 and containing 1,700 sq. ft. of net living area (*per the City's Assessing records*). The two-family dwelling is not an allowed use in the IND-L District and, therefore, is considered "legal non-conforming".

On April 15, 2024, the Planning Board granted a Conditional Use Permit (PB2024-04-CUP) and Site Plan approval (PB2024-14-SPR) to convert the two-family dwelling to a mixed use building containing (i) a one-bedroom apartment and (ii) an office use with accessory warehouse space in the garage. Approved exterior improvements include a parking area to the rear, stormwater treatment features, lighting, and landscaping. The Notices of Action for PB2024-02-CUP & PB2024-14-SPR are attached for reference.

The applicant now proposes to convert the second dwelling unit to an office use – specifically, to accessory storage space for the previously approved office use and accessory office warehouse conversion of the first dwelling unit.

Figure 1. Street view of property.

©2023 Google, https://lebanonnh.mapgeo.io/ (image date: August 2023)

STAFF COMMENTS

PLANNING

I. SITE PLAN REVIEW REGULATIONS:

The applicant's request constitutes a modification to an approved site plan pursuant to Section 9.1 of the Site Plan Review Regulations, as follows:

Section 9.1 – Modifications to an Approved Site Plan

> Once a plan has received approval from the Board and prior to the issuance of a Certificate of Occupancy, no modification shall take place unless the modification of the plan has been approved by the Board, except as provided by Section 9.2 ("Minor Alternations to an Approved Site Plan") below. [...]
>
> Modifications shall normally be treated by the Board as a new plan application, which will require notification of abutting property owners, a public hearing, staff review, and formal Board action. [...]

Note that Section 9.2 allows "minor alterations" to an approved plan that do not constitute a "material change" (Section 9.2.A also requires that the alterations are "necessitated by unforeseen or unanticipated circumstances"). Section 9.2.B.1 provides that a change shall be deemed a minor alteration only if, "it is relatively minor, in light of the overall scope of the proposal."

It's not clear whether the proposed change was "necessitated by unforeseen or unanticipated circumstances". However, a Conditional Use Permit is clearly required for the conversion of the second dwelling unit to accessory office storage. Therefore, since the proposed use change requires Planning Board approval for the Conditional Use Permit, staff advised the applicant to also apply for a site plan amendment (as opposed to possibly approving the site plan change administratively per Section 9.2).

II. ZONING ORDINANCE:

Use: "Office", which is allowed in the IND-L District by Conditional Use Permit from the Planning Board per Section 303.2 of the Zoning Ordinance, is defined in Appendix A of the Zoning Ordinance as follows:

> A room or group of rooms used for the carrying on, conducting or managing of a business or for the practice of a profession. This term includes, but is not limited to: offices for lawyers, engineers, architects, attorneys, accountants, insurance, real estate, or investment agencies, or any similar type of profession, as well as medical offices including offices of a physician, dentist, psychologist, optometrist or other licensed health care provider, which does not include any hospital or ambulatory surgical care facilities.

Per Section 302.2 of the Zoning Ordinance, uses that are accessory to uses allowed by conditional use (including the proposed office storage use of what is currently a dwelling unit) shall also require a conditional use permit.[1]

Per Section 302.4.B of the Zoning Ordinance, the Planning Board may grant a Conditional Use Permit if it finds that the proposal meets the Enhanced Performance Standards set forth in Section 302.4.D as follows:

1. The site is suitable for the proposal. This includes:
   a. Adequate vehicular and pedestrian access for the intended use.
   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.
   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to

[1] "Accessory use" is defined in Appendix A of the Zoning Ordinance as follows: "A use subordinate and customarily incidental to the principal use of the premises."

be impacted by the intended use.

d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

NOTE: The criteria set forth in Section 302.4.D.3, 4 and 5 relate to new construction and, since no new construction is proposed, are inapplicable to the subject application.

The applicant has submitted testimony addressing the Section 302.4.D criteria in the attached Application for Conditional Use Permit Support Statement (pages 6-8 of the application materials attachment).

In approving a Conditional Use Permit request, Section 302.4.E of the Zoning Ordinance provides that the Planning Board "may impose conditions as it finds reasonably appropriate to safeguard the neighborhood and the general public or otherwise serve the purposes of this Ordinance, including such measures as set forth in Section 802.4 ("Special Conditions")." Section 802.4.B of the Zoning Ordinance provides as follows:

> [T]he Board may attach whatever conditions it deems necessary to the approval decision in order to assure compliance with the purposes of this Ordinance. Such conditions may include but are not necessarily limited to:
> 1. Increasing the required lot size or yard dimensions in order to protect the adjacent properties.
> 2. Limiting the coverage or height of building because of obstruction to view and reduction of light and air to adjacent properties.
> 3. Controlling the location and number of vehicular access points to the property.
> 4. Increasing the street width adjacent to the property.
> 5. Increasing the number of on-site off street parking or loading spaces required.
> 6. Requiring suitable on-site landscaping and screening where necessary to reduce noise and glare and to maintain the property in character and keeping with the surrounding area.
> 7. Specifying a time limit for initiation of construction, alteration, or enlargement of a structure to house an exception.
> 8. Providing for specific layout of facilities on the property such as location of the building, parking areas, access to the building so as to minimize effect on adjoining property.
> 9. Specifying standards for operation of this [conditional use] so that it will be no more objectionable to the neighborhood by reasons of noise, odors, vibrations, flashing lights or hours of operation than will be the operation of a permitted use at that site.
> 10. Specifying the length of time of the [conditional use] and time of occupancy during the year, or hours of operation.

Parking: The applicant proposes a total of 9 parking spaces for the office and accessory office storage use, with two (2) of the parking spaces for the outdoor storage of trailers associated with the principal office use. The 7 proposed parking spaces for the office/accessory office storage use conforms with the minimum parking requirements of Section 607 of the Zoning Ordinance (*7.4 spaces are required pursuant to the Shared Parking Ratio Reduction Factors set forth in Table 607.6, which may be rounded down to 7 pursuant to the Table of Minimum Off-Street Parking Requirements which provides that the minimum number of required parking spaces required for any use shall be "rounded down to the nearest whole"*).[2]

CITY ASSESSOR
No comment at this time.

BUILDING INSPECTOR
The proposed use will require a Building Permit and compliance with all applicable Building Code requirements include those relating to accessibility.

ENGINEERING/PUBLIC WORKS
No comment at this time.

FIRE DEPARTMENT
No comment at this time.

POLICE DEPARTMENT
No comment at this time.

STAFF RECOMMENDATIONS

If the Planning Board moves to approve this request, then based on the information reviewed by City staff the Planning and Development Department recommends that the Planning Board approve the application with the same conditions as those found in the Notices of Actions for PB2024-02-CUP & PB2024-14-SPR (see attached). Time permitting, staff will aim to prepare a draft motion for the current application to replace the existing approvals for PB2024-02-CUP and PB2024-14-SPR. Additional proposed conditions of approval include the following:

1. The conversion of the 2nd dwelling unit is approved for use as accessory storage space to the office use conversion of the 1st dwelling unit approved by Conditional Use Permit on April 15, 2024 (PB2024-02-CUP), subject to the following:

    a. An expansion of the principal office use into the accessory storage space shall require a Conditional Use Permit from the Planning Board for so long as the property continues to be subject to zoning regulations that require a Conditional Use Permit for an "office" use in the zoning district in which the property is located.

    b. Other changes of use shall be allowed pursuant to all applicable land use regulations and procedures. Any such future change to a "permitted use" (as identified in the Zoning Ordinance) shall not require Planning Board site plan approval unless the proposed use or any related proposed site improvements or changes requires site plan approval

[2] Section 607.1.C of the Zoning Ordinance provides that, "[t]he minimum number of required off-street parking spaces for accessory uses shall be calculated separately from the principal use where the minimum parking requirement for the accessory use is less than that required for the principal use."

pursuant to the jurisdictional thresholds set forth in the Site Plan Review Regulations as determined by Planning & Development Department staff.

2. Within 30 days of the Planning Board's approval, the applicant shall make the following revisions to the plan set to the satisfaction of the Planning and Development Department:

    a. Update the plan set cover sheet "Zoning Comparison" table to change the "warehouse" use to "accessory warehouse space for office use", and to add a note indicating that the total required 7.4 parking spaces is rounded down to 7 pursuant to the Table of Minimum Off-Street Parking Requirements; and

    b. All other changes required pursuant to Conditions of Approval #10 of the April 15, 2024 Notice of Action for PB2024-14-SPR.

Attachments

cc: Edwards Properties, LLC (via e-mail)
Dan Nash, Advanced Geomatics & Design (via e-mail)
File

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

NOTICE OF ACTION
LEBANON PLANNING BOARD
PB2024-02-CUP

Notice is hereby given that on **January 8, 2024**, the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

Jeremy Rutter moved that the application of Edwards Properties, LLC, 99 Heater Road (Tax Map 78, Lot 41), zoned IND-L: Request for a Conditional Use Permit pursuant to Section 303.2 of the Zoning Ordinance for a proposed office use is complete enough for the Planning Board to accept jurisdiction and commence review.

The motion was seconded by Richard Ford Burley. The vote on the motion was unanimous in favor, 5-0.

Notice is hereby given that on **April 15, 2024**, the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

Richard Ford Burley moved that, on January 8, 2024, March 18, 2024, and April 15, 2024, at duly-noticed meetings of the Lebanon Planning Board, there appeared representatives of property owner Edwards Properties, LLC, regarding 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L, regarding a requested Conditional Use Permit pursuant to §303.2 of the Zoning Ordinance for a proposed office use. PB2024-02-CUP

I. FINDINGS OF FACT

Based on testimony given, application materials presented, and supporting documents submitted, the Planning Board makes the following findings of fact:

1. The property is located within the IND-L District on the south side of Heater Road and abuts the Hypertherm facility to the rear. The property is currently improved with a two (2)-story, two-family dwelling constructed in 1950 (per the City's Assessing records). The two-family dwelling is not an allowed use in the IND-L District and, therefore, is considered "legal non-conforming".

2. The applicant proposes to convert the existing two-family dwelling to a mixed-use building containing (i) a dwelling unit and (ii) an office use with accessory warehouse space in the basement and attached garage. Site improvements include a proposed parking lot to the rear.

3. "Office," which is allowed in the IND-L District by Conditional Use Permit from the Planning Board. Per Section 302.4.B of the Zoning Ordinance, the Planning Board may grant a Conditional Use Permit if it finds that the proposal meets the Enhanced Performance Standards set forth in Section 302.4.D.

4. The applicant has submitted testimony addressing the Section 302.4.D criteria in an application received by the Planning and Development Department on December 4, 2023, as well as in supplemental written materials provided by the applicant.

II. CONCLUSIONS OF LAW

As a result of the above findings of fact and based on testimony given, application materials presented, and supporting documents submitted, the Planning Board concludes the following with respect to the Enhanced Performance Standards set forth in §302.4.D of the Zoning Ordinance:

1. The site is suitable for the proposal. (§302.4.D.1)

2. The external impacts of the proposed use on abutting properties and the neighborhood is commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. (§302.4.D.2)

3. The proposed layout and design of the site is not incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. (§302.4.D.3)

4. The criteria set forth in Section 302.4.D.4 relates to new building construction and, since no new building construction is proposed, is inapplicable to the subject application.

5. The proposed use and layout of the site, including all related development activities, does to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. (§302.4.D.5)

III. DECISION

Now therefore be it resolved, the Planning Board, on this 15th day of April, 2024, hereby grants the request of Edwards Properties, LLC, for a Conditional Use Permit per Section 303.2 of the Zoning Ordinance to convert a portion of the existing building at 135 Heater Road (Tax Map 78, Lot 41) to an office use as set forth above and per testimony, plans, and materials submitted, and per the following conditions:

1. No outdoor storage is permitted other than 2 trailers which are required to be parked in the proposed rear parking lot.

2. Impact fees calculated pursuant to Section 213 of the Zoning Ordinance shall be assessed prior to the issuance of a building permit and shall be paid prior to the issuance of a Certificate of Occupancy.

3. The Conditional Use Permit is contingent on approval of the site plan application of Edwards Properties, LLC, for 135 Heater Road (Tax Map 78, Lot 41), PB2024-14-SPR, currently pending before the Board. If the site plan is approved, all conditions of approval for application PB2024-14-SPR are incorporated herein and shall be considered conditions of approval for the requested Conditional Use Permit.

4. If the site plan for application PB2024-14-SPR is approved, the site plan provided as a part of this conditional use permit application will be updated through the approved site plan.

The motion was seconded by Brandon Hill. The vote on the motion was approved, 7-0.

Notice of Action prepared by: Crystal Taplin, Administrative Assistant, April 24, 2024

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

NOTICE OF ACTION
LEBANON PLANNING BOARD
PB2024-14-SPR

Notice is hereby given that on **April 15, 2024**, the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

Kathie Romano moved that the application of Edwards Properties, LLC, 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L: In conjunction with a pending Conditional Use Permit application (PB2024-02-CUP), applicant requests Site Plan Review for a conversion of the existing two-family dwelling to a mixed-use building for a proposed office use and a dwelling unit, together with associated site improvements including additional parking spaces and a handicap ramp is complete enough for the Planning Board to accept jurisdiction and commence review.

The motion was seconded by Richard Ford Burley. The vote on the motion passed.

Notice is hereby given that on **April 15, 2024**, the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

Richard Ford Burley moved that, for the application of Edwards Properties, LLC, PB2024-14-SPR, the Lebanon Planning Board approves waivers from the following sections of the Site Plan Review Regulations:

- **5.1.E.13** – requiring building elevations depicting proposed lighting fixtures
- **6.2.B.1** – requiring a 15 ft. wide perimeter landscaping buffer
- **6.2.B.10** – requiring trees at 40 ft. intervals along property frontage
- **6.7.C.1** – parking area lighting requirements (average horizontal illuminance and uniformity ratio)
- **6.2.B.6** – requiring an additional 5 ft. of perimeter landscaping along the side of the property adjoining the neighboring residential use, together with an opaque screen

The motion was seconded by Kathie Romano. The vote on the motion was approved, 7-0.

Notice is hereby given that on **April 15, 2024**, the following action was taken by a majority of the Lebanon Planning Board in accordance with the City of Lebanon Site Plan Review Regulations:

Richard Ford Burley moved that the Lebanon Planning Board approves the Site Plan Review application of Edwards Properties, LLC, regarding 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L, PB2024-14-SPR, for a conversion of the existing two-family dwelling to a mixed-use building for a proposed office use and a dwelling unit, together with associated site improvements including additional parking spaces, as shown on a plan set titled set titled, “99 Heater Road,” prepared by Advanced Geomatics and Design, dated January 30, 2024, last revised March 28, 2024 (11 sheets), including any and all submissions and testimony provided for and during the

public hearing.

In support of its decision, the Board finds that the applicant has submitted plans, testimony, technical data, information, reports, and studies that together satisfactorily demonstrate compliance with the applicable requirements of the Site Plan Review Regulations, except as may reasonably be addressed through the imposition of certain conditions of approval, set forth below, and except as may have been waived pursuant to Section 7.1.

This approval is subject to the following conditions:

General Conditions

1. It shall be the applicant's responsibility to be familiar with and aware of these conditions of approval, and it shall be the applicant's responsibility to satisfy these conditions of approval and to satisfy them within the relevant timeframes outlined below.

2. The development is subject to the Site Plan Review Regulations adopted May 13, 1991, last revised January 23, 2023, and the Zoning Ordinance adopted January 16, 2013, last amended February 7, 2024, which are the regulations in effect at the time the application was submitted.

3. A building permit must be applied for and issued within two (2) years of the date of this approval (4.10.A), subject to an extension if applied for by the applicant and if approved by the Planning Board per Section 4.10.B.

4. "Active and substantial development," as defined in Section 8.4.A.1 of the Site Plan Review Regulations, shall be achieved within two (2) years of the date of this approval (8.4.A.2), subject to an extension if applied for by the applicant and if approved by the Planning Board per Section 8.4.A.3. If active and substantial development is not achieved within two (2) years of the date of the Planning Board's approval, the development shall be subject to any changes in the City's land use regulations.

5. "Substantial completion," as defined in Section 8.4.B.1 of the Site Plan Review Regulations, shall be achieved within five (5) years of the date of this approval. If substantial completion is not achieved within five (5) years of the date of the Planning Board's approval, the development shall be subject to any changes in the City's land use regulations.

6. All required landscape plantings shall meet the minimum size requirements for such plantings set forth in Section 6.2.B of the Site Plan Review Regulations at the time of installation.

7. The applicant shall implement and maintain NHDES Site Specific Best Management Practices before, during, and after construction.

8. Edge-of-disturbance fencing shall be installed and maintained before and during any site work, to be verified by the City Engineer or City's third-party inspector on site.

9. The property owner is responsible for the maintenance and operation of the stormwater management system in accordance with the O&M plan, and such responsibility shall run with the land. (Section 6.6.H.2.b of the Site Plan Review Regulations).

Conditions to be Satisfied Prior to Application for a Building Permit and Prior to the Start of Any Construction Activities

10. Within 30 days of the Planning Board's approval, the applicant shall make the following revisions to the plan set to the satisfaction of the Planning and Development Department:
    a) Add a note that the property does not contain wetlands and reference the March 7, 2024 letter from Peter Spear.
    b) On the Cover Sheet:
        i. Update title of plan set and property address information on cover sheet to 135 Heater Road.
        ii. In the "Zoning Comparison" table on the cover sheet:
            1. clarify that 9 parking spaces are proposed including two spaces for the outdoor storage of two trailers for the office use.
            2. add a footnote that the office use is permitted pursuant to a Conditional Use Permit approved on April 15, 2024 (PB2024-02-CUP)
            3. provide description of plan revisions made pursuant to the Planning Board's approval (5.1.E.4.d).
    c) On Sheet 5 (C-1):
        i. add a note identifying how trash pickup will be handled.
        ii. provide a legend identifying various symbology.
        iii. identify proposed uses of the existing building (staff note: instead of "ex. Garage" and "ex house" which would be more appropriate for an existing conditions plan, not a site plan that is intended to depict future conditions).
    d) On Sheet 8 (L-1), remove Landscape Note #10 which is duplicative of Note #9.
    e) On Sheet 9 (L-2), clearly identify the color correlated temperature (CCT) and wattage of the proposed building-mounted light fixture.
    f) Make such alteration to Sheets 5 (C-1) and 8 (L-1) as necessary to depict only the proposed conditions after the completion of the proposed work and provide equally detailed plans of the same size and scale depicting only the existing conditions prior to the proposed work.
    g) On Sheet 9 (L-2), add a second light fixture on the eastern edge of the parking lot to improve lighting conditions and show the revised lighting levels.

11. Once approved by staff pursuant to Condition of Approval #10, the applicant shall provide the Planning and Development Department with a digital copy of the final revised plan set saved in a PDF-A format for archival purposes.

12. The applicant shall schedule and hold a pre-building permit application meeting with the Planning and Development Department, City Building Inspectors, City Engineer/Department of Public Works, and Fire Department, in order to help streamline the building permit review process and to review applicable code requirements.

13. The applicant shall obtain approval from the City Council or the City Manager's office for any additional water and/or sewer flows in accordance with the applicable Chapter 136 and 182 of the City Code.

14. All engineering review fees shall be paid in full as required by Section 4.7.E.1 of the Site Plan Review Regulations. (Staff note: applicant can request an invoice from the Department of Public Works).

Conditions to be Satisfied Prior to the Issuance of a Building Permit

15. The development shall be subject to City of Lebanon Impact Fees, pursuant to Section 213 of the Zoning Ordinance. The Impact Fee shall be calculated at the time of Building Permit issuance based on the Impact Fee Schedule adopted on October 12, 2021. In accordance with RSA 674:39, the approved site plan shall be exempt from any future changes in impact fees and methodology for five years from the date of approval; however, any building permits which are issued after the end of that five-year period shall be fully subject to whatever impact fees and methodology are in effect at the time of building permit issuance.

16. All water and sewer fees shall be paid as set forth in City Code Chapter 68.

17. Prior to the start of any construction activities on the property, the applicant shall obtain or update (if appropriate) any required State approvals.

Conditions to be Satisfied Prior to the Issuance of a Certificate of Occupancy

18. The impact fee calculated pursuant to Condition of Approval #15 shall be paid.

19. All improvements depicted on the plan shall be completed and shall be constructed as depicted on the approved plan, including any modifications to the plan as may be approved by the Planning Board in accordance with the Site Plan Review Regulations.

The motion was seconded by Jeremy Rutter. The vote on the motion was approved, 7-0.

Notice of Action prepared by: Crystal Taplin, Administrative Assistant, April 24, 2024

CITY OF LEBANON
APPLICATION FOR

SPECIAL EXCEPTION	☐	☐	SITE PLAN REVIEW
VARIANCE	☐	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☒	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT):

NAME: Edwards Properties, LLC TEL.#: Tel#: 603-448-6363

MAILING PO Box 600, Lebanon, NH 03766

E-MAIL ADDRESS: jcicotte1@aol.com

CO-APPLICANT, AGENT, OR LESSEE:

NAME: Dan Nash TEL.#: 802-356-4928

MAILING ADDRESS: 105 Bank St, Lebanon, NH 03766

E-MAIL ADDRESS: AdvancedGeomatics@comcast.net

PROJECT LOCATION:

TAX MAP #: 78 LOT#: 41 PLOT #: ZONE: IND-L

STREET ADDRESS OF PROJECT: 135 Heater Road

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☐ YES ☒ NO **HISTORIC DISTRICT** ☐ YES ☒ NO

FLOOD PLAIN ☐ YES ☒ NO

SCOPE OF PROJECT:

Expand office use for Lot 78-41 for local cleaning business

TYPE OF OCCUPANCY:

EXISTING ☐ VACANT ☐ ONE FAMILY ☒ TWO FAMILY ☐ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☒ COMMERCIAL ☐ INDUSTRIAL
IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC** USE: office

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on 8 July, 20 24, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER: _____ DATE: _____

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER: _____ DATE: _____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - $ AMOUNT	DATE PAID	VOUCHER #

(Last Revised 4/04/18)

AGD
Advanced Geomatics & Design

10 June 2024

Tim Corwin, Planning Office
City of Lebanon
51 North Park Street
Lebanon, NH 03766

Re: Conditional Use Permit Application Update
PB2024-02-CUP
Lot 78-41, 135 Heater Road

Dear Mr. Corwin:

We provide the following in support of the revised CUP application for 135 Heater Road:

The applicant has decided to eliminate the residential unit, which has been existing and non-conforming. The former residential space will be used for storage for the office use, Aslan's maintenance.

The conversion of the residential unit to storage results in no change to the required parking. To support this, we have attached revised floor plans that show the office and storage areas. The attached spreadsheet tallies the areas of the rooms and uses and shows parking calculations.

Please let me know if you need any further materials to support this application.

Sincerely,

STATE OF NEW HAMPSHIRE
DANIEL A. NASH
No. 5737
LICENSED
PROFESSIONAL ENGINEER

Daniel A. Nash, PE
Principal

CC: Edwards Properties

Attachments:
-Parking Calculation
-Site plan, Sheet C-1
-Building Floor Plans
-Updated CUP Support Statement

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EDWARDS Properties						
135 HEATER ROAD						
LEBANON, NH						
PARKING CALCULATIONS						
	Existing					
	Area				Spaces	
135 Heater Road	(sf)	Use	Rate	Units	Required	
Office						
first floor						
1-din	141					
1-kit	128					
1-foyer	133					
1-porch	74					
1-liv	199					
first floor total	675					
second floor						
2-br	131					
2-bath	45					
2-landing	46					
2-stairs	32					
2-br	168					
second floor total	422					
Office-total	1,097	office	1/250sf	1,097	4.4	
Storage						
garage	528					
basement	600					
basement(under gar)	196					
warehouse(Storage)-total	1,324	warehouse	1/1,000sf	1,324	1.3	
former Two BR apartment		warehouse	1/1,000sf	1,697	1.7	
(to be vacated and used as storage)						
basement	600					
first floor			sub-total		7.4	
1-din	141				(round up)_	
1-kit	128		Total required=		8.0	
1-foyer	133					
1-porch	74		20% overage allowed		8.9	(7.4*1.2)
1-liv	199					
first floor total	675		Total Provided=		9	
second floor						
2-br	131					
2-bath	45					
2-landing	46					
2-stairs	32					
2-br	168					
second floor total	422					
recap						
basement	600					
first	675					
second	422					
	1,697					

AGD
Advanced Geomatics & Design

TO: TIM CORWIN, PLANNING OFFICE

FROM: DANIEL A. NASH, PE

RE: FEE FOR APPLICATION FOR CONDITIONAL USE APPLICATION
LOT 78-41

CC: EDWARDS PROPERTIES

DATE: 10 JUNE 2024

We offer the following to indicate how we calculated the application fee. Please let us know if we need to make any adjustments.

Site Plan		
Filing Fee		$ 250.00
Advertising Fee		$ 100.00
Notification Fee ($5 + 4.98 x 5)		$ 29.90
Owner/Applic.	1	
Abutters	3	
Professionals	1	
To be notified	5	
Total Application Fee		$ 379.90

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CERTIFIED NOTIFICATION LIST

THE CITY OF LEBANON IS REQUIRED UNDER NH RSA 672:3 TO NOTIFY THE FOLLOWING PERSONS OF PUBLIC HEARINGS BEFORE THE PLANNING BOARD: ALL ABUTTERS; THE APPLICANT; PROPERTY OWNER; HOLDER OF CONSERVATION, PRESERVATION, OR AGRICULTURAL PRESERVATION RESTRICTION(S); AND EVERY ENGINEER, ARCHITECT, LAND SURVEYOR, OR SOIL SCIENTIST WHOSE PROFESSIONAL SEAL APPEARS ON ANY PLAT SUBMITTED TO THE BOARD.

PLEASE PROVIDE NAMES & MAILING ADDRESSES FOR ALL PERSONS LISTED ABOVE.

MAP & LOT NUMBER: 78-41	**MAP & LOT NUMBER:** 78-41
PROPERTY OWNER: Edwards Properties, LLC PO Box 600 Lebanon, NH 03766	APPLICANT: Edwards Properties, LLC PO Box 600 Lebanon, NH 03766
MAP & LOT NUMBER: 78-42	**MAP & LOT NUMBER:** 78-43
ABUTTER/OTHER: Gordon Bagley, Jr PO Box 1157 Lebanon, NH 03766	ABUTTER/OTHER: Hypertherm, Inc PO Box 14 Hooksett, NH 03106
MAP & LOT NUMBER: 51-13	**MAP & LOT NUMBER:**
ABUTTER/OTHER: Benevolent & Protective Order Elks 150 Heater Road Lebanon, NH 03766	ABUTTER/OTHER:
MAP & LOT NUMBER:	**MAP & LOT NUMBER:**
ABUTTER/OTHER:	ABUTTER/OTHER:
MAP & LOT NUMBER:	**MAP & LOT NUMBER:**
ABUTTER/OTHER:	ABUTTER/OTHER:
MAP & LOT NUMBER:	**MAP & LOT NUMBER:**
~~ABUTTER~~/OTHER: Engineer Advanced Geomatics PO Box 512 Lebanon, NH 03766	ABUTTER/OTHER:

(9/17/04)

City of Lebanon, New Hampshire

APPLICATION FOR CONDITIONAL USE PERMIT SUPPORT STATEMENT

Office Use Only Date Received: _____ Application No.: _____

submitted 3Dec23
revised 7Feb24
revised 10Jun24

I. APPLICATION CHECKLIST

- *Application form*
- *Public Hearing Notification List*
- *Filing fee*
- *This form, including written responses to the Section 302.4.D requirements, outlined below*
- *A site plan*
- *Optional: photos and any other materials in support of your application*

II. PROJECT DESCRIPTION

I (we) hereby request a Conditional Use Permit as provided for in Article(s) III, Section(s) 303.2 and 302.4 of the Lebanon Zoning Ordinance.

Please describe your proposed project with as much detail as possible. You can respond in the space provided below or on a separate sheet of paper.

To relocate the existing Aslan's Cleaning business office from 5 Edwards Street to 135 Heater Road ~~so that the building will have one existing residential unit along with the office~~

Applicant now proposes to eliminate the residential unit and make the area storage for the office use.

III. CONDITIONAL USE PERMIT CRITERIA

In order to obtain a Conditional Use Permit, you must demonstrate to the Planning Board that the proposal satisfies the applicable criteria set forth in Sections A and B below. You must address each criteria in the space provided or on a separate sheet of paper.

A. Specific Criteria

The Conditional Use Permit is authorized by Article III, Section 303.2 of the Zoning Ordinance which requires the applicant to demonstrate that (*please address any criteria set forth in the Zoning Ordinance that specifically apply to your proposed use or project*):

There are no specific criteria that apply for an office in the IND-L zone

B. General Criteria per Section 302.4.D

A conditional use permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following standards:

1. The site is suitable for the proposal. This includes:

   a. Adequate vehicular and pedestrian access for the intended use.

Aslan's has been in business for many years at 5 Edwards Street. The location at 99 Heater Road will provide a more efficient office, better access, and convenient location for its operations. At its current location, Aslan's has vehicles parked in the street and 99 Heater Road will provide more suitable parking. The street is served by sidewalks.

   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

The property is served by public water and sewer and is easily accessible by all municipal services.

correction: site is served by municipal water and one-site septic

   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

As no changes are intended for the site which is currently developed with a structure with paved parking, there will be no impacts on the site or the area. The property is not in the floodplain and does not have steep slopes.

correction: site will be improved with 7 new parking spaces

   d. The availability of appropriate utilities to serve the intended use including water, Sewage disposal, storm water treatment, electricity, and similar utilities.

The site is currently served with municipal water and sewer, and is on a well-developed section Heater Road. No additional utilities are required for the operation of the Aslan office.

correction: site is served by municipal water and one-site septic

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

The only abutting properties are the Hypertherm facility on the south side, a multifamily building to the west, and across the street is the Elks Lodge. The office generates no external noise, dust, odors, and its hours of operation are early morning to evening, similar to the other business along Heater Road.

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

No changes are anticipated to the existing site layout. The use of the property for an office is compatible with the Hypertherm facility, the Elks Lodge, and nearby Fort Harry's truck stop.

correction: site will be improved with 7 new parking spaces

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

No new buildings are anticipated or required. The existing brick building is a feature of the established neigghborhood which is primarily a through street for traffic from Enfield and Lebanon which is headed to DHMC, Centerra or Hanover.

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

The existing site will be maintained with no expected changes to the site or the building which is usable for an office.

correction: site will be improved with 7 new parking spaces

135 HEATER ROAD

LEBANON, GRAFTON COUNTY, NEW HAMPSHIRE

SITE PLAN

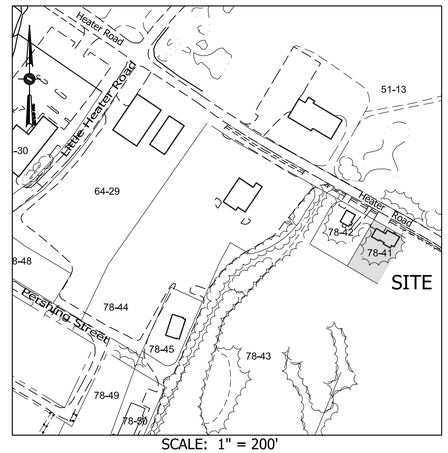
OWNER/APPLICANT
EDWARDS PROPERTIES, LLC
PO BOX 600
LEBANON, NH 03766

CONSULTANTS

CIVIL ENGINEER
DANIEL A. NASH, PE
ADVANCED GEOMATICS AND DESIGN
PO BOX 512
105 BANK STREET
LEBANON, NH 03766
advancedgeomatics@comcast.net

LAND SURVEYOR
CHRIS PATON, LLS
PATON LAND SURVEYS, LLC
150 SOUTHRIDGE STREET
HARTLAND, VT 05156

LANDSCAPE DESIGN
MARA ROBINSON
MARA LANDSCAPE DESIGN
16 MYRTLE AVENUE
NEWBURYPORT, MA 01950



SCALE: 1" = 200'

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SHEET NUMBER		
2	OVERALL PLAN	OA-1
3	BOUNDARY SURVEY	-
4	EXISTING CONDITIONS PLAN	X-1
5	SITE PLAN	C-1
6	PAVER PANEL DETAIL	C-2
7	STORMWATER/EROSION CONTROL PLAN	C-3
8	LANDSCAPE PLAN	L-1
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10	SITE DETAILS	D-1
11	EROSION CONTROL DETAILS	D-5

ZONING COMPARISON - IND-L DISTRICT

	EXISTING	PROPOSED	REQUIRED	
LOT SIZE	0.345Ac	0.345Ac	2.0 Ac.	
	15,021sf	15,021sf		
GROSS FLOOR AREA				
-BASEMENT	1,396sf	1,396sf		
-FIRST FLOOR	1,745sf	1,745sf		
-SECONDFLOOR	844sf	844sf		
TOTAL	3,985sf	3,985sf		
FRONTAGE: (HEATER ROAD)	100'	100'	200'	
FRONT YARD:	17'	17'	40'	
SIDE YARD: (TO EAST)	10'	10'	20'	
SIDE YARD: (TO WEST)	20'	20'	20'	
REAR YARD:	94'	94'	20'	
BUILDING FOOTPRINT (s.f.):	2,312sf	2,312sf		
% BLDG.COVERAGE	15.4%	15.4%	50%	
IMPERVIOUS AREA (sf)	3,759sf	6,900sf		
% IMPERVIOUS COV.	24.4%	44.8%	NONE	
HEIGHT	30±'	30±'	45' max.	
USE: OFFICE/DWELLING UNIT(2BR APARTMENT) ***				
PARKING (REG./HC.)				
-OFFICE (1,097SF)	-	4.4	1/250SF	
-WAREHOUSE (3,021SF)	-	3.0	1/1,000SF	
SUB-TOTAL	4/0	9	7.4	**
MAXIMUM ALLOWED	-	8.9(8/1)	120%	
LOADING SPACES	0	0	0	
BICYCLE PARKING	0	2*	2	

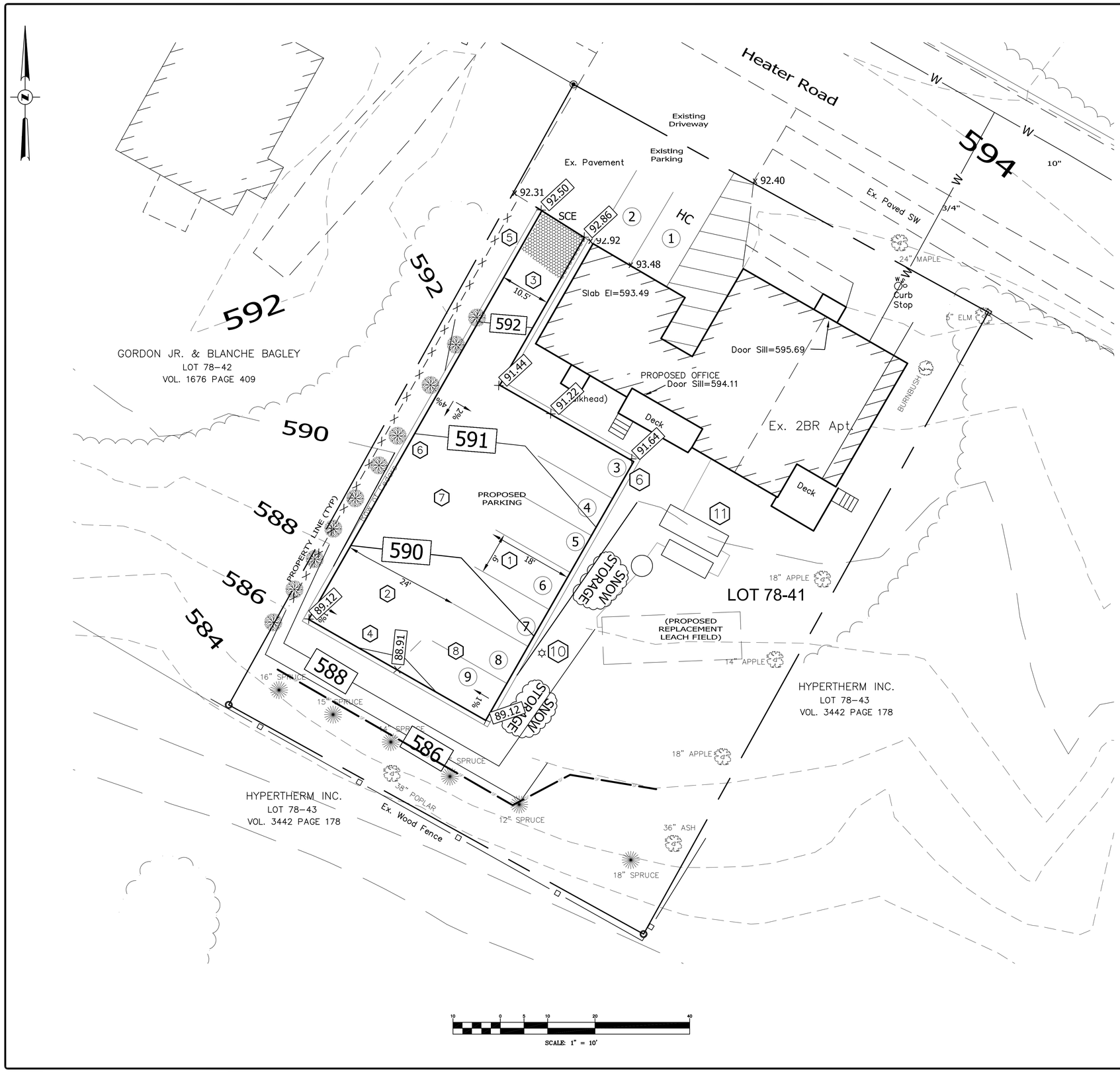
*BICYCLE PARKING PROVIDED IN FOYER OR GARAGE.
**TWO PARKING SPACES ARE INTENDED FOR THE OUTDOOR STORAGE OF TRAILERS FOR OFFICE USE.
***OFFICE USE IS PERMITTED PURSUANT TO CUP APPROVED 15APR24(PB2024-02-CUP).

NOTES:

1. THIS PARCEL IS SHOWN AS LOT 78-41 ON THE LEBANON TAX MAPS. THE PHYSICAL ADDRESS IS 135 HEATER ROAD.
2. THIS PARCEL IS SERVED BY MUNICIPAL WATER AND ON-SITE SEWER.
3. THIS PARCEL IS NOT SUBJECT TO THE WETLANDS OVERLAY DISTRICT. THE PROPERTY WAS DETERMINED TO BE FREE OF WETLANDS; SEE NRCS LETTER REPORT DATED 7MAR24.
4. THIS PARCEL IS NOT SUBJECT TO THE FLOOD OVERLAY DISTRICT.
5. SUBJECT PARCEL IS ZONED IND-L.

STATE OF NEW HAMPSHIRE
DANIEL A. NASH
No. 9537
LICENSED
PROFESSIONAL ENGINEER

7/01/2024 CHNG TO OFFICE
~~05/13/2024~~ PB CONDITIONS
~~03/28/2024~~ STAFF COMMENTS
~~03/07/2024~~ STAFF COMMENTS
~~01/30/2024~~
SITE PLAN
PN: 23-017



LEGEND

- BOUNDARY POINT
- REBAR (FOUND)
- IRON PIN (FOUND)
- STONE/CONCRETE MONUMENT
- STONE FENCE POST
- UTILITY POLE
- UTILITY POLE ANCHOR
- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- WOOD FENCE
- 8' PRIVACY FENCE
- CENTERLINE DITCH
- EDGE OF ROAD
- EDGE OF WATER
- EDGE OF WET AREA
- EXISTING EDGE OF WOODS
- EXISTING 2' CONTOUR/FLIGHT CONTOUR
- EXISTING 10' CONTOUR/20' FLIGHT CONTOUR
- 72 PROPOSED 2' CONTOUR
- 70 PROPOSED 10' CONTOUR

NOTES:

1. PARKING SPACES 9X18.
2. 24' AISLE
3. 10.5' DRIVE
4. PAVERS. SEE SHEET C-3.
5. 8' PRIVACY FENCE. PLACE 2' OFF PROPERTY LINE. REPLACE CEDARS DISTURBED BY FENCE INSTALLATION.
6. SLOPED GRANITE CURB.
7. PROPOSED PAVED PARKING.
8. SPACES 8&9 TO BE USED FOR TRAILER PARKING.
9. TRASH REMOVAL WILL BE THROUGH WHEELY BINS STORED IN GARAGE.
10. PROPOSED SITE LIGHT FIXTURE.
11. PROPOSED REPLACEMENT SEPTIC SYSTEM

SHEET 5 OF 11

#	REVISIONS	DATE
3	PB COMMENTS	04/30/2024
2	ADD PAVING AND CURBING	03/28/2024
1	STAFF COMMENTS	03/07/2024

SITE PLAN
FOR
EDWARDS PROPERTIES, LLC
IN
LEBANON, NEW HAMPSHIRE

ADVANCED GEOMATICS & DESIGN
105 BANK STREET - PO BOX 512
LEBANON, NEW HAMPSHIRE 03766
PHONE: (603) 448 6295
E-MAIL: advancedgeomatics@comcast.net

STATE OF NEW HAMPSHIRE DANIEL A. NASH No. 7937 LICENSED PROFESSIONAL ENGINEER

SURVEYED:	PATON
DESIGNED:	DAN
DRAWN:	DAN
CHECKED:	DAN
DATE:	01/30/2024

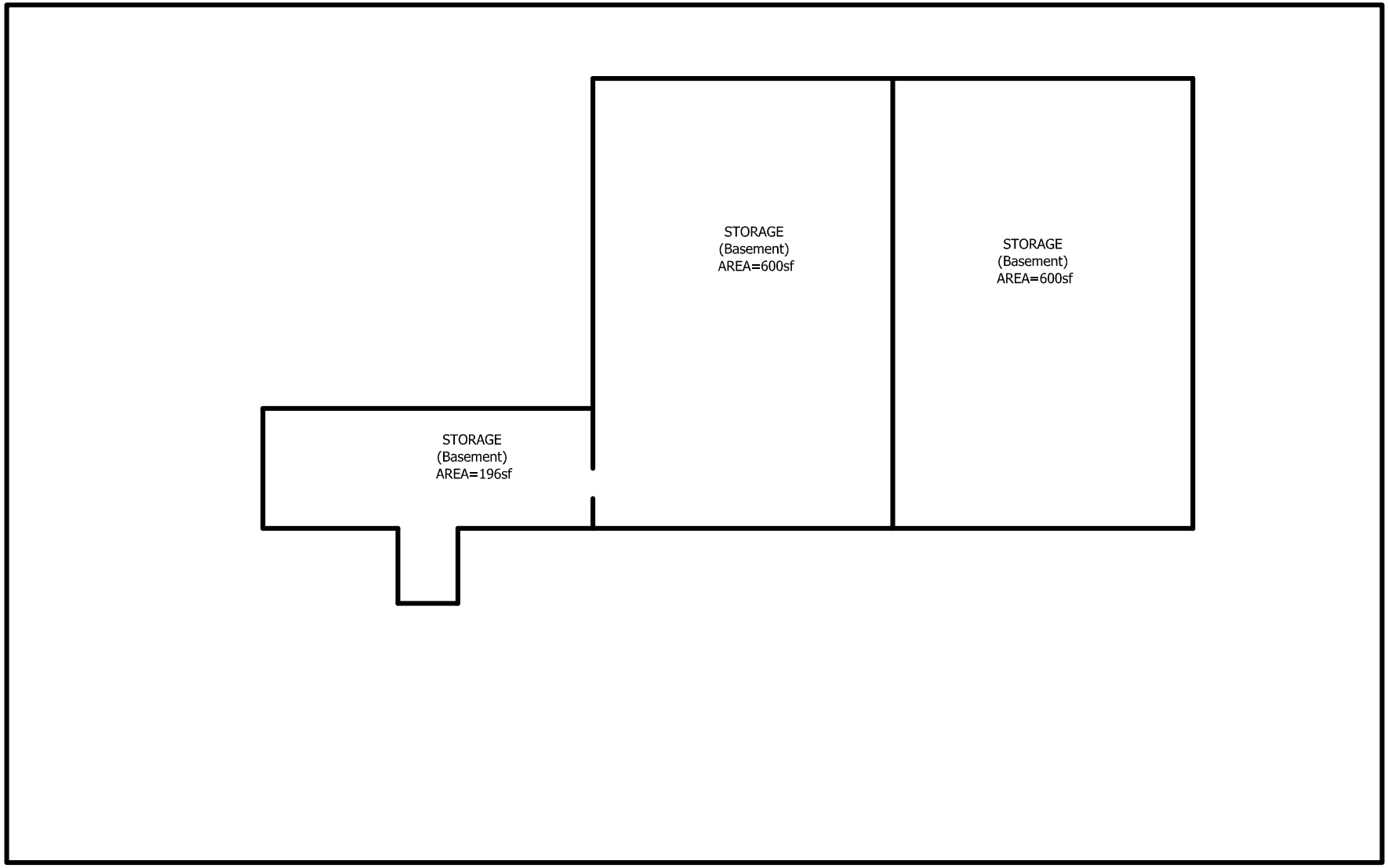
EDWARDS PROPERTIES

SITE PLAN

C-1

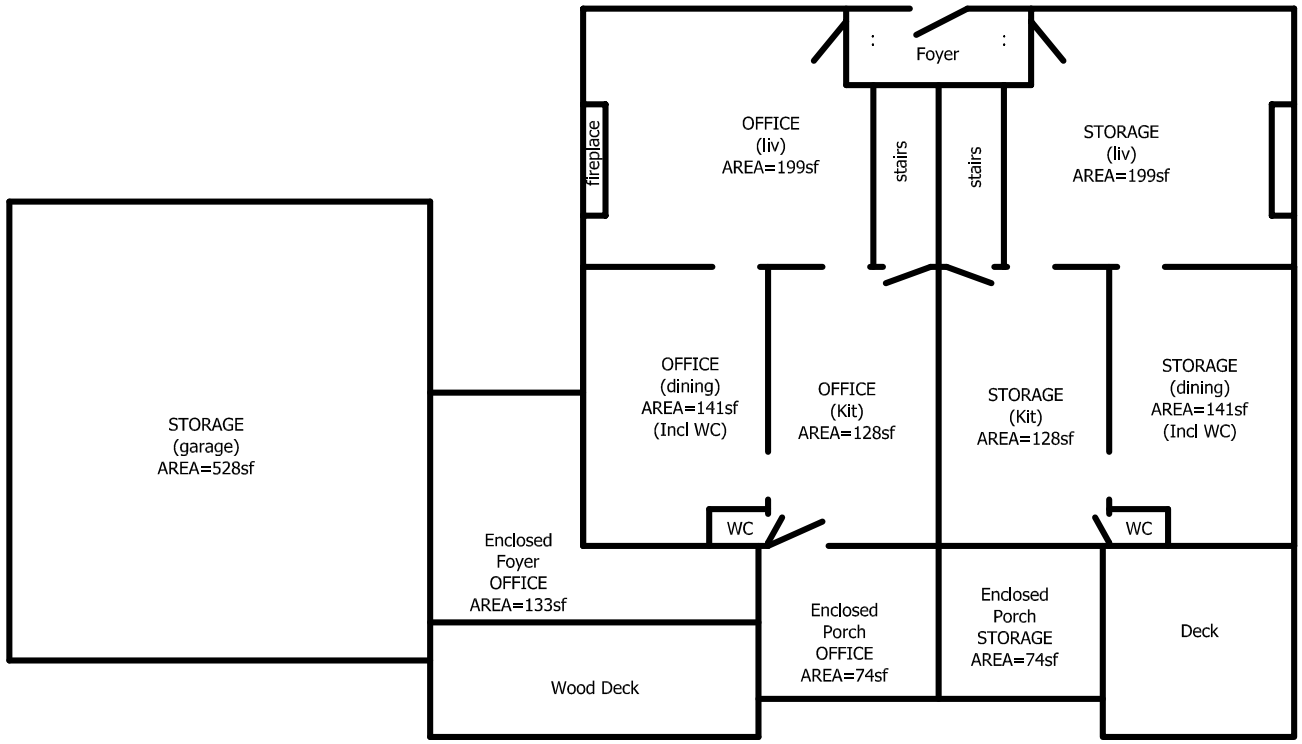
© 2024
ADVANCED GEOMATICS & DESIGN

DWG: C:\



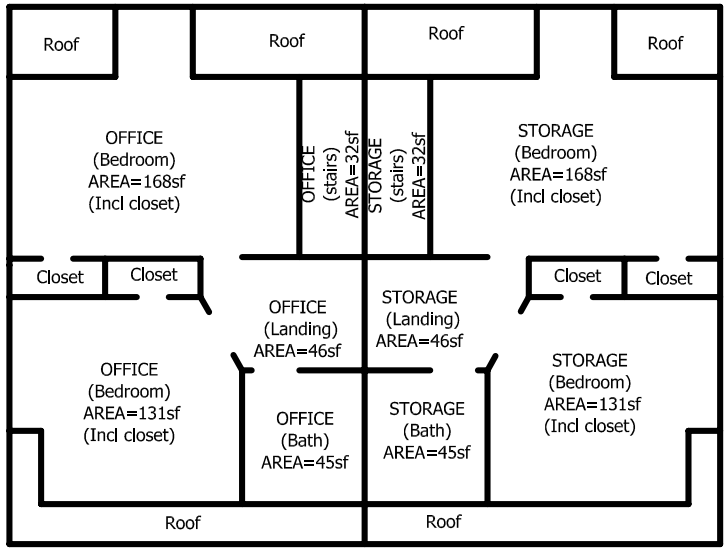
BASEMENT FLOOR PLAN
SCALE: 1"=10'

135 HEATER ROAD
6 JUNE 2024



FIRST FLOOR PLAN
SCALE: 1"=10'

135 HEATER ROAD
6 JUNE 2024



SECOND FLOOR PLAN
SCALE: 1"=10'

135 HEATER ROAD
6 JUNE 2024

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

PLANNING BOARD

September 9, 2024 Meeting

Staff Memorandum – PB2023-37-CUP

APPLICATION INFORMATION

Agenda Item: 3.D

Application ID: PB2024-37-CUP

Application Type: Conditional Use Permit per §307.2 of the Zoning Ord. for a proposed art studio use

Property Location & Tax Map:
10 Spencer St (Tax Map 92, Lot 33)

Applicant(s): Jennifer & Nick Russell

Property Owner:
Spencer Street Storage, LLC

Zoning District: LD District

Future Land Use Map:
Central Business District

Property Size (per City Assessor):
+/-0.31 acres (13,503 sq. ft.) *(property is conforming to min. 3,000 sq. ft. lot size required in LD District per §307.2 of the ZO)*

Existing Improvements and Use:
A one (1)-story, 16,180 sq. ft. (gross) commercial building constructed in 1910 (*per City Assessor records)*, currently vacant per the applicant; prior rug cleaning use approved by Special Exception in 1996 (ZB92-33-96)

Proposed Use: art studio *(it is unclear whether the art studio use will occupy the entire building or a portion thereof)*

Overlay District: Floodplain District

Other Approvals Required:
Building & Zoning Permit

Attachments:
- ZBA Notices of Decision for ZB92-33-96 and ZB2004-32
- Application materials (20 pgs)

LEGAL NOTICE

Jennifer Caine Russell & Nick Russell (applicants), Spencer Street Storage, LLC (property owner), 10 Spencer Street (Tax Map 92, Lot 33), zoned LD: Applicants request a Conditional Use Permit pursuant to Article III, Section 307.2 of the Zoning Ordinance to allow an art studio use within the existing building. PB2024-37-CUP

COMPLETENESS REVIEW

In order to accept jurisdiction and commence review of the applicants' proposal, the Planning Board must first determine that the application is complete. NH RSA 676:4, I(c)(1). The Planning and Development Department has reviewed the application and recommends that the Board find that the application is complete enough to accept jurisdiction and to commence review.

However, as discussed below under Staff Comments, staff had requested additional information from the applicant (including a site plan of the property showing existing conditions), none of which was provided. Staff recommends that the Board continue the application to a future date so that the information can be provided in writing and in advance of the public hearing.

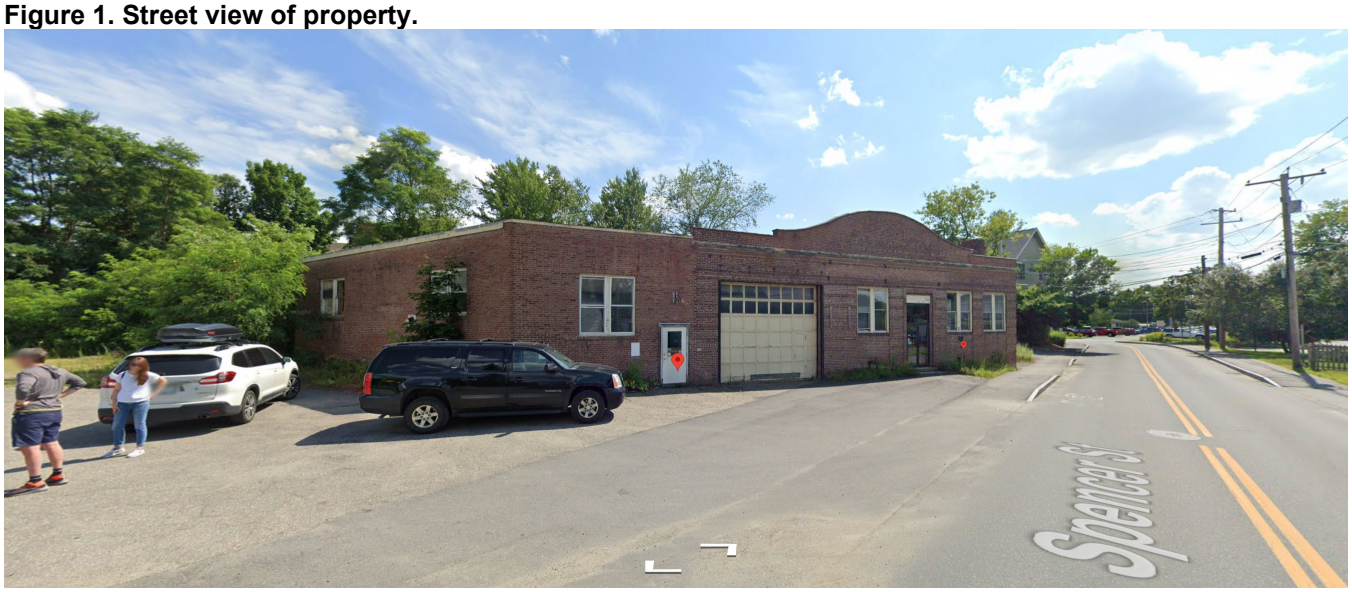
SUMMARY OF REQUEST

The subject property is +/-0.31 acres, is located on Spencer Street and is abutted by the Northern Rail Trail to the rear, and is improved with a one-story commercial building constructed in 1910, according to the City's assessing records. The building's gross square footage according to the City's assessing records is 13,503 sq. ft. (7,836 sq. ft. of which is identified as "living area"). According to the applicant, the building is currently vacant. The applicant's application does not include a site plan, so it's not clear what site improvements are located on the property.

The prior use of the building was a "rug cleaning" business which was approved by Special Exception from the Zoning Board of Adjustment on January 17, 1996 (ZB92-33-96) (at the time of approval, only a portion of the building was proposed to be occupied by the rug cleaning business, however, per the ZBA's conditions of approval, the rug cleaning business was permitted to expand without additional ZBA approval). Subsequently, on January 18, 2005, the ZBA approved a Special Exception to allow a portion of the building to be used as self-storage

units (ZB2004-32). It is not clear whether the self-storage Special Exception approval was ever utilized. Copies of the 1996 and 2005 ZBA Notices of Decision are attached for reference and to provide additional background information on the property.

Figure 1. Street view of property.



©2024 Google, https://lebanonnh.mapgeo.io/ (image date: July 2024)

Figure 2. Bird's eye view of subject property (looking south).

Image ©2021 Eagleview (image taken 4/4/2021)

SUMMARY OF REQUEST

The applicant proposes to utilize the building for a proposed "art studio" use. *See* attached application materials for additional information. It is not clear whether the entire building is proposed for art studio use or just a portion thereof. The floor plan included with the application shows five spaces, none of which are labeled "art studio". Rather, the five spaces are identified as:

A. "Jen"
B. "Enrico"
C. "Tenant Area 'A'"
D. "Tenant Area 'B'" and
E. "Common Area".

The floor plan should be updated to identify the proposed uses of these spaces.

Additional information about the nature and scope of the proposed art studio use requested by staff in an e-mail to the applicant's representative was not provided (see Staff Comments below).

The proposed art studio use requires an interior fit up to what staff understands is currently a vacant space. No site changes are proposed. As noted above, the applicant's application does not include a site plan, so it's not clear what site improvements are located on the property.

ZONING ORDINANCE REQUIREMENTS

"Art studio" – an undefined use - is allowed in the Lebanon Downtown (LD) District by Conditional Use Permit from the Planning Board pursuant to Section 307.2 of the Zoning Ordinance. Per Section 302.4.B of the Zoning Ordinance, the Planning Board may grant a Conditional Use Permit if it finds that the proposal meets the Enhanced Performance Standards set forth in Section 302.4.D as follows:

1. The site is suitable for the proposal. This includes:
   a. Adequate vehicular and pedestrian access for the intended use.
   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.
   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.
   d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

NOTE: The criteria set forth in Section 302.4.D.3, 4 and 5 relate to new construction and, since no new construction is proposed, are inapplicable to the subject application.

The applicant has submitted testimony addressing the Section 302.4.D criteria in the attached letter from Frank J. Barrett, AIA, of Barrett Architecture, dated August 11, 2024 (see pages 5-9 of the application materials attachment).

STAFF COMMENTS

A. In an e-mail to the applicant's representative sent on August 13, 2024, staff provided the following comments on the application:

1. Please provide more information about what the use is and how it will operate. Just for example, what will be the hours of operation? Will it have employees? If so, how many? Will it have tenants? If so, how many? Will the art studio be open to the public at all? If so, when? Etc.

2. There is no minimum required parking in the LD District (except as may be required by the Planning Board through Site Plan Review), however the application should indicate what the expected parking needs of the proposed use(s) will be.

3. Please submit a site plan showing existing improvements, building access, and existing on-site parking. If applicable, it might be helpful to also show any adjacent or nearby on-street parking.

4. Please submit a floor plan showing the location of the proposed art studio use and the remaining space to be occupied in the future.

5. Please confirm whether the building will require accessibility improvements and if so, how those will be addressed.

6. Please confirm with Rod Finley, the Floodplain Administrator, whether a Floodplain Permit will be required per Chapter 72 of the City Code (rod.finley@lebanonnh.gov).

7. You may also want to verify with Leigh Hays, the Building Official, whether any Building Code floodplain requirements will apply (leigh.hays@lebanonnh.gov).

8. Please consider including some photos of the property/building, if feasible. This is just a suggestion.

The applicant's representative responded by e-mail on September 4, 2024, but did not provide any of the requested information, except to provide "some photos" in response to staff's comment #8 (in comparison with comments 1-7, staff noted that comment 8 was "just a suggestion"). It is staff's view that the requested information is needed in order to for the Board to fully evaluate the applicant's request. Therefore, staff recommends that the Board continue the application to a future date so that the information can be provided in writing and in advance of the hearing.

B. If the Board moves to approve the application, staff recommends that the Board include the following condition:
   - "Impact fees calculated pursuant to Section 213 of the Zoning Ordinance shall be assessed prior to the issuance of a building permit and shall be paid prior to the issuance of a Certificate of Occupancy."

   Staff may recommend other conditions of approval depending on whether the Planning Board requires the applicant to provide the information requested by staff and/or depending on the testimony provided at the public hearing.

C. Per Section 302.4.E of the Zoning Ordinance, the Planning Board "may impose conditions as it finds reasonably appropriate to safeguard the neighborhood and the general public or otherwise serve the purposes of this Ordinance, including such measures as set forth in Section 802.4 ("Special Conditions")." Section 802.4.B of the Zoning Ordinance provides as follows:

   [T]he Board may attach whatever conditions it deems necessary to the approval decision in order to assure compliance with the purposes of this Ordinance. Such conditions may include but are not necessarily limited to:
   1. Increasing the required lot size or yard dimensions in order to protect the adjacent properties.
   2. Limiting the coverage or height of building because of obstruction to view and reduction of light and air to adjacent properties.
   3. Controlling the location and number of vehicular access points to the property.
   4. Increasing the street width adjacent to the property.
   5. Increasing the number of on-site off street parking or loading spaces required.
   6. Requiring suitable on-site landscaping and screening where necessary to reduce noise and glare and to maintain the property in character and keeping with the surrounding area.
   7. Specifying a time limit for initiation of construction, alteration, or enlargement of a structure to house an exception.
   8. Providing for specific layout of facilities on the property such as location of the building, parking areas, access to the building so as to minimize effect on adjoining property.
   9. Specifying standards for operation of this [conditional use] so that it will be no more objectionable to the neighborhood by reasons of noise, odors, vibrations, flashing lights or hours of operation than will be the operation of a permitted use at that site.
   10. Specifying the length of time of the [conditional use] and time of occupancy during the year, or hours of operation.

Attachments

cc: Jennifer Caine Russell & Nick Russell (applicants), (via e-mail)
Spencer Street Storage, LLC (via e-mail)
Frank J. Barrett, AIA, Barrett Architecture (via e-mail)
File

Book (2)

City of Lebanon

51 North Park Street
P.O. Box 1207
Lebanon, New Hampshire 03766-4207

NOTICE OF DECISION
ZONING BOARD OF ADJUSTMENT

On January 17, 1996, at a duly noticed meeting of the Lebanon Zoning Board of Adjustment, there appeared Peter Jordan, property owner, and Keith Beardslee, applicant, seeking a special exception from the terms of Article III, Section 306.2, and other sections of the Ordinance found to be applicable to permit "service sales" at 10 Spencer Street, in the CBD zone. #ZB-~~104-8-1-95~~ 92-33-96

Based on testimony given, plans presented and inspection of the site, the Lebanon Zoning Board of Adjustment makes the following findings of fact:

1. The proposed use would occupy approximately 1900 sq. ft. of an existing 8000 sq. ft. multi-tenant structure.

2. The applicant proposes to have an office, storage of and restoration of smoke and/or water-damaged property and furnishings.

3. The building has limited onsite parking and the applicant proposes to utilize offsite public parking which is permitted in the CBD zone.

4. Mr. Jordan testified that previous "...tenants who have been in this building...include business uses of storage, printing/addressing service and machine shops. All have had products which they bring in, modify and then send out."

5. That the proposed use will not create a hazard as the chemicals used are water- or isopropyl-alcohol based.

6. The zoning ordinance allows by special exception "Service Sales" and that there is no definition of service sales within the ordinance.

As a result of the above findings of fact, documentation, testimony and inspections, the Board concludes:

A. The term "service sales" is primarily intended to be a retail operation. Therefore the special exception as a "service sales" is not met by the applicant but that the proposed use is a change in non-conforming use equally appropriate to the district as the previous uses of the building. Such a change in use is permitted by provisions of this ordinance.

B. That the special conditions for change in use have been met because the applicant's use is for the cleaning and remanufacture of items which is equal to those uses presently in the building

C. That there are no existing violations of this ordinance on the property.

D. That the character of the area shall not be adversely affected.

E. That no hazard or nuisance will be created.

F. That the capacity of existing or planned community facilities and services (including streets and highways) will not be adversely impacted.

G. That granting the special exception will not result in undue municipal expense.

H. That the proposed special exception will be developed in a manner compatible with the spirit and intent of the ordinance.

I. That the general welfare of the City will be protected.

Now therefore, be it resolved the Lebanon Zoning Board of Adjustment hereby **Denies the request** for a special exception under Article III, section 306.2#7 and **Grants a change in non-conforming use** under Article VII section 702.1 to permit the applicants use as described in this decision and minutes of the public hearing, and attaches the following special conditions:

1. The Board further attaches the condition that the proposed use is not limited to the approximately 1900 sq. ft. as testified, but may in the future displace the existing uses and occupy the entire structure.

2. At no time shall any vehicle required to carry out the uses within the building block or interfere with traffic flow on Spencer Street while loading or unloading.

Signed:_____
John Jay Hutchins, Chairman

Dated: March 04, 1996

NOTE: Applications for rehearing on any questions of the above determination may be taken within 20 days by any party to the action or proceedidngs, or any person directly affected. The 20 day time period shall be counted in calendar days beginning with the next working day during which the office of the board (Zoning) is open to the public following the day on which the decision is rendered, according to New Hampshire Revised Statutes Annotated, Chapter 677:2

Codes
Department

Building and Zoning
51 North Park Street
Lebanon, NH 03766
Telephone: 603-448-1524
Facsimile: 603-448-0684

NOTICE OF DECISION
ZONING BOARD OF ADJUSTMENT

On December 20, 2004 and January 3, 2005 at a duly noticed meeting of the Lebanon Zoning Board of Adjustment, there appeared **Keith Beardslee** seeking a special exception to Article III, Section 306.2 to permit change of one nonconforming use to another nonconforming use at 10 Spencer Street, Lebanon, NH, in the CBD zone. (Tax Map 92, Lot 33) #ZB2004-32

Based on the testimony given, plans presented, and inspection of the site, the Lebanon ZBA makes the following findings of fact:

1. The building is currently approved for:

    a. Restorex- Permitted by special exception 1996 to occupy 1,900 square feet of the 8,000 square foot footprint and given specific permission to expand to occupy the whole in the future.

    b. Machine shop[s] occupying the remainder of the premises.

2. The 1996 special exception recognized the machine shop use as grandfathered and the Restorex use as 'warehouse', a use not permitted in the CBD zone.

3. The current Restorex use includes a 320 square foot rug washing area, other cleaning and restoration areas, storage, and associated offices.

4. The ordinance has no minimum parking requirement for uses in the CBD.

5. The proposal is for the building to be occupied by two businesses:

    a. Up to 80 self-storage units to occupy 800 square feet of the footprint and to include an unspecified second story/mezzanine within this 800 square feet.

    b. Restorex will reconfigure and expand to occupy the remaining floor space.

6. The Codes Administrator identifies self storage units as Warehouse use.

7. No exterior changes will be made to the building as part of this special exception.

8. There will be no additional employees.

9. The area of the Spencer Street side of the building [the front] will have two 9x18 foot spaces for loading labeled "NO PARKING, 30 MINUTES LOADING ONLY". This front area will have no other parking.

10. Restorex will have parking in the internal bay, the area to the west of the building, and also will use municipal parking in the area for its employees and customers.

11. The self storage will have 24/7 access through a door opening into an internal passageway from the front loading area; as well as access via the Restorex interior parking and loading dock during the Restorex hours, which are:

    Monday - Friday 8 AM to 5 PM, and Saturday 8-12 Noon.

12. There was discussion by the Applicant and Board of the legality of parking in the City Right of Way.

13. Drawings labeled ZBA 2004-32 12/20/2004 and 1/3/2005 showing boundaries, parking, access, and internal use distributions are submitted and will be attached to this decision.

14. Board members testified as to their personal observation of little traffic to other Self Storage uses in the area.

15. Published articles were submitted by the Applicant purporting to demonstrate that the traffic would be minimal:

    a. Member Pauls noted that the conclusions claimed in these articles were completely unsubstantiated by methodology they reported.

16. Nobody spoke from the public for or against.

As a result of the above findings of fact, documentation, testimony, and inspections, the Board concludes:

A. That the special exception is specifically authorized by Article VII; Section 702.5 of this ordinance.

B. That there are no special conditions required.

C. That there are no existing violations of this ordinance on the property.

    a. Parking in the Spencer Street Right-of-Way will be discontinued.

D. That the character of the area shall not be adversely affected by this special exception:

   a. There will be no external changes and the traffic will not be increased by the change from the machine shop/Restorex use to the Restorex/self storage units.

E. That no hazard or nuisance will be created insofar as the area in the front of the building will be reserved for storage unit loading and any parking will be relocated.

F. That the capacity of existing or planned community facilities (including streets and highways) will not be adversely impacted. Although Spencer Street is expecting an increase in traffic due to the opening of Emerson Gardens apartments, the Applicant's change of use will not increase that traffic further.

G. That granting the special exception will not result in undue municipal expense.

H. That the proposed special exception will be developed in a manner compatible with the spirit and intent of the ordinance.

I. That the general welfare of the City will be protected.

Now therefore, be it resolved that the Lebanon Zoning Board of Adjustment hereby **GRANTS** the request of Keith Beardslee for a special exception to Article III, Section 306.2 to permit the expansion of warehouse use to the entire building, comprising of Self Storage units in 800 square feet of the footprint, and Restorex to the remainder of the building, and attaches the following condition:

1. That the area in front of the building will have two 9x18 foot maneuverable parking spaces marked LOADING ONLY. There will be no other parking in this area.

A special exception shall expire if (1) the use is not in place within one year of the date of the issuance of a zoning permit; or (2) if the use is discontinued for any reason for more than two (2) years. In such cases, a new application for special exception must be completed.

NOTE: Within 30 days after any order or decision of the zoning board of adjustment, any party to the action or proceedings or any person directly affected thereby may apply for a rehearing in respect to any matter determined in the action. This 30 day time period shall be counted in calendar days beginning with the date upon which the board voted to approve or disapprove the application. RSA 677:2.

The Zoning Board voted to approve this application on **January 18, 2005**

APPLICATION FOR

SPECIAL EXCEPTION	☐	☐	SITE PLAN REVIEW
VARIANCE	☐	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☒	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT): STORAGE, LLC

NAME: SPENCER STREET TEL.#:

MAILING ADDRESS: P.O. BOX 317; ENFIELD, NH 03748

E-MAIL ADDRESS:

CO-APPLICANT, AGENT, OR LESSEE:

NAME: JENNIFER LAINE RUSSELL / NICK RUSSELL TEL.#:

MAILING ADDRESS:

E-MAIL ADDRESS:

PROJECT LOCATION:

TAX MAP #: 92 LOT#: 33 PLOT #: N/A ZONE: LD

STREET ADDRESS OF PROJECT: 10 SPENCER STREET

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☐ YES ☒ NO **HISTORIC DISTRICT** ☐ YES ☐ NO

FLOOD PLAIN ☒ YES ☐ NO

SCOPE OF PROJECT:

SEE ATTACHED LETTER

TYPE OF OCCUPANCY:

EXISTING ☒ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC** USE: ARTISTS STUDIOS

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on _____, 20____, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER: FRANK J. BARRETT, II / AGENT DATE: 8/11/2024

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER: _____ DATE: _____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - $ AMOUNT	DATE PAID	VOUCHER #

City of Lebanon, New Hampshire

APPLICATION FOR CONDITIONAL USE PERMIT SUPPORT STATEMENT

Office Use Only Date Received: _____ Application No.: _____

I. APPLICATION CHECKLIST

- *Application form*
- *Public Hearing Notification List*
- *Filing fee*
- *This form, including written responses to the Section 302.4.D requirements, outlined below*
- *A site plan*
- *Optional: photos and any other materials in support of your application*

II. PROJECT DESCRIPTION

I (we) hereby request a Conditional Use Permit as provided for in Article(s) III, Section(s) 307, of the Lebanon Zoning Ordinance.

Please describe your proposed project with as much detail as possible. You can respond in the space provided below or on a separate sheet of paper.

SEE ATTACHED LETTER

III. CONDITIONAL USE PERMIT CRITERIA

In order to obtain a Conditional Use Permit, you must demonstrate to the Planning Board that the proposal satisfies the applicable criteria set forth in Sections A and B below. You must address each criteria in the space provided or on a separate sheet of paper.

A. Specific Criteria

The Conditional Use Permit is authorized by Article III, Section 307 of the Zoning Ordinance which requires the applicant to demonstrate that (*please address any criteria set forth in the Zoning Ordinance that specifically apply to your proposed use or project*):

SEE ATTACHED LETTER.

SEE ATTACHED LETTER

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

SEE ATTACHED LETTER

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

SEE ATTACHED LETTER

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

SEE ATTACHED LETTER

B. General Criteria per Section 302.4.D

A conditional use permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following standards:

1. The site is suitable for the proposal. This includes:

   a. Adequate vehicular and pedestrian access for the intended use.

SEE ATTACHED LETTER

   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

SEE ATTACHED LETTER

   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

SEE ATTACHED LETTER

   d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

SEE ATTACHED LETTER

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

SEE ATTACHED LETTER

barrett architecture
FRANK J. BARRETT, JR., A.I.A.

August 11, 2024

Lebanon Planning Board
C/O City of Lebanon Planning and Development Department
51 North Park Street
Lebanon, NH 03766

Attn:
Tim Corwin; Deputy Planning and Development Director
RE:

10 Spencer Street; Lebanon, NH.
Map 92 / Lot 33; In the LD Zoning District.

Dear Members of the Lebanon Planning Board,

This application for Conditional Use Permit concerns the existing property located at 10 Spencer Street; Tax Map 32 / Lot 33; located in the "LD" Lebanon Downtown District (zoning district). My client, Jennifer Caine Russell and Nick Russell, are the Applicants. Spencer Street Storage, LLC is the current property owner. If certain circumstances align, the Applicant will be purchasing the property from the current Owner.

The Applicant proposes to restore, renovate, and otherwise repair the existing single-story masonry building and convert it into artists studio space that could also accommodate similar compatible uses, as will be further described below. At this time the property is standing vacant. It is believed that the most recent use of the property was a rug cleaning business, an industrial use. As per the terms of the adopted **Zoning Ordinance #2; Section 307 "*Lebanon Downtown District (LD)*", page 35,** states that a "**Craftsman's Shop, art studio"** is a use allows by the issuance of a Conditional Use Permit from the Lebanon Planning Board. Hence, the application now before the Board. This Conditional Use Permit request is as provided for in Article III Use Districts; Section 307 LD District; Table 307.2 Table of Uses, of the adopted Zoning Ordinance.

Project Description

The 10 Spencer Street property in question is, according to the City's property assessor's records, a 0.31-acre lot with a single-story building of 7,836 gross square feet. As stated above, the building is one-story masonry construction, with wood framed floor and roof construction. There is a small basement area of 520 square feet that is not in use and is not planned to be by the Applicant. It is thought that the building was constructed circa 1910 as an automotive repair garage. All of its past uses have been of similar industrial uses.

281 The Bend Road ■ Greensboro Bend, Vermont 05842
Telephone: (802) 296-0004 ■ E-mail: FrankJBarrettJr@gmail.com

This proposal includes exterior cleanup and repair of the building, and the construction of several or more emergency exterior exits, the exact location yet to be determined. Otherwise, there are no changes being proposed to the exterior of the building. The interior will be repaired and renovated into about five studio spaces, with a small amount of common area. The intent is to maintain, at both the exterior and interior of building, the historic industrial look of the premises.

Although "art studio" is the clear intended proposed use of the building, it is important that the Conditional Use Permit, should the Board find in the Applicant's favor, recognize other uses that are compatible with the proposed studio use, such as an architect's office / studio as an example. It should be noted that the State of New Hampshire's building code lists these uses as being within the same classification: "B" Business Use Group. The applicable building codes do not require that the building be equipped with an automatic sprinkler system. This is in large part based upon the proposed a very benign and non-hazardous use, the building size, and the building construction type.

Conditional Use Permit

A. Specific Criteria.

The Conditional Use Permit is authorized by Article III, Section 307, of the Zoning Ordinance which requires the applicant to demonstrate that the proposed use is specifically listed within Table of Uses (see page 33 of the adopted Zoning Ordinance).

B. General Criteria per Section 302.4D.

1. The site is suitable for the proposed use.

a. Adequate vehicular and pedestrian access for the intended use.

The proposed use is specifically stated in the zoning ordinance as a use allowed by a Conditional Use Permit. It is a very benign use that does not generate, nor rely upon, retail pedestrian or vehicular traffic. The existing building fronts on Spencer Street where posted speed limit is low and vehicular traffic flows well. This is a pedestrian friendly area of downtown Lebanon with ample sidewalks. The property, at the rear, abuts the Northern Rail Trail. It is this writer's opinion that this is an ideal use of the property given the concerns of pedestrian and vehicular traffic.

b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

Because the existing building has good frontage on Spencer Street, access to the site and building interior for emergency services is excellent. The same is true concerning pedestrian facilities. The existing vehicular curb cut from Spencer Street onto the lot is not proposed to change. And, as mentioned above, the posted speed limit for Spencer Street is very low. Furthermore, this

proposed use does not generate traffic on to or off of the site other then the coming and going of the persons working within the interior studio environment.

c. **The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.**

It should be noted that the property, as it currently exists, is within the 100-year floodplain (see attached Elevation Certificate dated November 30, 2018). The first floor of the existing building is above the applicable elevation and none of the proposed interior repair or alteration work will alter or impact this existing condition. There are no other environmental constraints present.

d. **The availability of appropriate utilities to serve the intended use including water, sewerage disposal, stormwater treatment, electricity, and similar utilities.**

As previously noted above, overall, the proposed studio use is a very benign use. The use does not rely upon heavy water usage for any processing requirements, nor does it rely upon excessive sewerage discharge. Within the existing building will be constructed new men's and women's toilet facilities, as per the building code for a "business" type use. Typical internet and telephone service will of course be required. The electrical power requirements will be for typical lighting and outlet as one would normally expect. Overall, there are no industrial or similar process uses being proposed with this use. It is truly a very quiet and benign use.

2. **<u>External Impacts:</u> The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse onsite or off-site effects. _ 3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.**

As stated in the testimony provided above, given the circumstances of the existing building, and the proposed new use of the property, as outlined, this is an ideal fit that transitions the property away from being an industrial or storage use, to a use more compatible with the emerging 21st century downtown Lebanon, and what the citizenry has over the past many years been envisioning. The use is pedestrian friendly within the walkable downtown area, that is quiet and unassuming, that generates little vehicular traffic, and is overall very benign. And the proposed use cleans up an otherwise unkept looking property, while bringing new life to the premises.

3. **Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.**

With this proposal, there are no changes proposed to be made to the site, other then a general cleaning up, and eliminating brush and the like.

4. **Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.**

This proposal, in part, seeks to repair and restore the existing building, while maintaining its historic character. It is obvious that the existing site and building is presently in a state of neglect and disrepair. As previously stated, there are no external alterations to the existing building other then the addition of several emergency exists as will be required by applicable building codes. It is proposed that those new exterior doors be in character with the historic "industrial" nature of the premises.

5. **Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.**

As noted, this proposal has a very minimal impact upon the existing site and building. From the exterior of the building will be visible a property that is rejuvenated and in a new quiet and unassuming use and looking to be cared for once again.

In conclusion, we believe that this is a worthwhile and well thought through proposal that well engage well with the ongoing transformation of this old established neighborhood, while being respectful of the area's historic character and roots. And we thank the Lebanon Planning Board for their time with, and attention to this application.

Sincerely,

LICENSED ARCHITECT
FRANK J. BARRETT, JR.
No. 1581
THE STATE OF NEW HAMPSHIRE

Frank J. Barrett, Jr. A.I.A.
Architect

Cc: Jennifer Caine Russell
Nick Russell

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1–9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A – PROPERTY INFORMATION		FOR INSURANCE COMPANY USE
A1. Building Owner's Name Keith Beardslee		Policy Number:
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 10 Spencer Street		Company NAIC Number:
City Lebanon	State New Hampshire	ZIP Code 03766

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Parcel ID # 92-33 Book 2190, Page 389 of the Grafton County Registry Of Deeds

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) Commerical

A5. Latitude/Longitude: Lat. 43°38'41.864" Long. -72°14'56.84" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number 2B

A8. For a building with a crawlspace or enclosure(s):

a) Square footage of crawlspace or enclosure(s) 8541.00 sq ft

b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade 13

c) Total net area of flood openings in A8.b 6493.00 sq in

d) Engineered flood openings? ☐ Yes ☒ No

A9. For a building with an attached garage:

a) Square footage of attached garage _____ sq ft

b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____

c) Total net area of flood openings in A9.b _____ sq in

d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
City of Lebanon 330061	Grafton	New Hampshire

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
330061 0913	E	02-28-2008	02-28-2008	AE	578.1

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☐ FIS Profile ☒ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☒ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No

Designation Date: _____ ☐ CBRS ☐ OPA

OMB No. 1660-0008
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 10 Spencer Street			Policy Number:
City Lebanon	State New Hampshire	ZIP Code 03766	Company NAIC Number

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: OD0039 Vertical Datum: NGVD

Indicate elevation datum used for the elevations in items a) through h) below.

☒ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source:

Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	573.3	☒ feet	☐ meters
b) Top of the next higher floor	581.6	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)		☐ feet	☐ meters
d) Attached garage (top of slab)		☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	574.5	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	577.9	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	579.9	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	575.4	☒ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No ☒ Check here if attachments.

Certifier's Name Ronald D Taber	License Number New Hampshire #943	
Title Owner		
Company Name Vive Libre Geomatics		
Address PO Box 1093		
City Lebanon	State New Hampshire	ZIP Code 03766
Signature Ronald D. Taber	Date 04-09-2019	Telephone (802) 291-6928 Ext.

STATE OF NEW HAMPSHIRE
No. 943
RONALD D. TABER
LICENSED LAND SURVEYOR
Ronald D. Taber
SIGNATURE

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments (including type of equipment and location, per C2(e), if applicable)

C2e : Oil Furnace

ELEVATION CERTIFICATE

BUILDING PHOTOGRAPHS

See Instructions for Item A6.

OMB No. 1660-0008
Expiration Date: November 30, 2018

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 10 Spencer Street			Policy Number:
City Lebanon	State New Hampshire	ZIP Code 03766	Company NAIC Number

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.

Photo One

Photo One Caption 03/28/2019 View from north Clear Photo One

Photo Two

Photo Two Caption 03/28/2019 View from west Clear Photo Two

From: frankjbarrettjr@gmail.com
To: Crystal Taplin
Cc: frankjbarrettjr@gmail.com; Tim Corwin; "Nick Estes"; "Nick Russell"; "Jennifer Caine"; "enrico riley"
Subject: RE: [EXTERNAL] 10 Spencer Street; Lebanon, NH; Conditional Use Permit Application.
Date: Wednesday, September 4, 2024 5:03:02 PM

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Please see my comments highlighted in yellow below. Jay

From: Crystal Taplin <Crystal.Taplin@lebanonnh.gov>
Sent: Wednesday, September 4, 2024 7:43 AM
To: 'frankjbarrettjr@gmail.com' <frankjbarrettjr@gmail.com>
Cc: Crystal Taplin <Crystal.Taplin@lebanonnh.gov>
Subject: RE: [EXTERNAL] 10 Spencer Street; Lebanon, NH; Conditional Use Permit Application.

Hi Jay,

Just checking on the response to the email below, along with the paper packets. If you could let me know the status, as we need to get the agenda finalized.

Crystal Taplin

From: Tim Corwin
Sent: Tuesday, August 13, 2024 9:14 PM
To: frankjbarrettjr@gmail.com
Cc: Crystal Taplin <Crystal.Taplin@lebanonnh.gov>
Subject: RE: [EXTERNAL] 10 Spencer Street; Lebanon, NH; Conditional Use Permit Application.

Jay –

Thank you again for submitting. I have reviewed the application (PB2024-37-CUP) and have a few comments:

1. Please provide more information about what the use is and how it will operate. Just for example, what will be the hours of operation? Will it have employees? If so, how many? Will it have tenants? If so, how many? Will the art studio be open to the public at all? If so, when? Etc. Nick Russel, Jenn Russel, and Enrico will be at the hearing and plan on commenting on these issues in full to the Board.
2. There is no minimum required parking in the LD District (except as may be required by the Planning Board through Site Plan Review), however the application should indicate what the expected parking needs of the proposed use(s) will be. Likewise, the applicant can speak to

that quite fully at the public hearing.

3. Please submit a site plan showing existing improvements, building access, and existing on-site parking. If applicable, it might be helpful to also show any adjacent or nearby on-street parking. At this point, because the project is still in a feasibility stage, and the applicants have not yet purchased the property, we don't yet have a site plan to offer the board. In fact, we are not yet surre that what the applicant is proposing will even be allowed.
4. Please submit a floor plan showing the location of the proposed art studio use and the remaining space to be occupied in the future. We have submitted a preliminary architectural sketch plan to the planning office that is reasonably close to what the applicants present thoughts are.
5. Please confirm whether the building will require accessibility improvements and if so, how those will be addressed. The building will include accessibility improvements. These will indeed be detailed in the plans that will be submitted along with the building permit application. And see the preliminary architectural sketch plan.
6. Please confirm with Rod Finley, the Floodplain Administrator, whether a Floodplain Permit will be required per Chapter 72 of the City Code (rod.finley@lebanonnh.gov).
7. You may also want to verify with Leigh Hays, the Building Official, whether any Building Code floodplain requirements will apply (leigh.hays@lebanonnh.gov). We are in conversations with Liegh.
8. Please consider including some photos of the property/building, if feasible. This is just a suggestion. Please see some photos sent under a separate email.

In response to the above, please provide a complete set of updated application materials by the end of the day on Tuesday, September 3rd, for inclusion in the 9/9/24 Planning Board agenda packet. We will need all materials submitted digitally (Crystal can send you a link to upload to the City's extranet) as well as four (4) hard copies of the complete application package. Just to be clear, your resubmission (both digital and hard copies) should contain the entirety of your application (for example, you included an elevation certificate with your original application. If you would like this to be provided to the Planning Board please include it again with your resubmission).

If you have any questions or would like to discuss anything, please don't hesitate to let me know.

Thanks, Tim

Tim Corwin, AICP
Deputy Planning and Development Director
City of Lebanon
(603) 448-1524 (Office)
(603) 442-6127 (Direct)
Tim.Corwin@LebanonNH.gov
Book a time to meet with me

****UPCOMING PTO: 8/16 – 9/3****

From: frankjbarrettjr@gmail.com <frankjbarrettjr@gmail.com>

Sent: Monday, August 12, 2024 1:17 PM
To: Tim Corwin <Tim.Corwin@lebanonnh.gov>
Cc: frankjbarrettjr@gmail.com; 'Nick Estes' <nick@estes-gallup.com>; 'Nick Russell' <nick@tuckermancapital.com>; 'Jennifer Caine' <jennifercainerussell@gmail.com>
Subject: [EXTERNAL] 10 Spencer Street; Lebanon, NH; Conditional Use Permit Application.

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good Afternoon, Tim.

Attached please find a Conditional Use Permit application concerning property located at 10 Spencer Street. As you might recall about a week or so ago, I communicated with you a potential new property owner's interest in converting the use of the now vacant building into artist studio space. I am the Applicant and Nick and Jennifer Russell are the co-applicants. I will have Nick and Jen ASAP stop by the City's Planning and Zoning office and pay the application fee. We are filing this by today in an effort to get before the Planning Board at their September 9th meeting.

Please let me know if you have any questions. As always, thank you for your assistance and interest.

Best – Jay

Nick and Jen: Please stop by the Lebanon Planning & Zoning office, in the city hall at 51 North Park Street, and pay the $400 fee, as calculated on page 2 of the fee schedule within that permit application.

Frank J. Barrett, Jr., A.I.A.
Architect
(802) 296-0004
Frankjbarrettjr@gmail.com
281 The Bend Road
Greensboro Bend, VT 05842

This email has been scanned for spam and viruses by Proofpoint Essentials. Click here to report this email as spam.

CERTIFIED NOTIFICATION LIST

Notice shall be sent by certified mail to the Owner; Applicant, if different from Owner; Abutters; Holders of conservation, preservation, or agricultural preservation restrictions (as defined under RSA 477:45) on the subject property; the holders of easements, rights-of-way, and other restrictions; and every engineer, architect, land surveyor, or soil or wetlands scientist whose seal appears on any plan submitted to the Board; and any other persons required by RSA 676:4, I(d). The names and mailing addresses shall be furnished by the Applicant.

672:3 Abutter. – "Abutter" means any person whose property is located in New Hampshire and adjoins or is directly across the street or stream from the land under consideration by the local land use board. For purposes of receiving testimony only, and not for purposes of notification, the term "abutter" shall include any person who is able to demonstrate that his land will be directly affected by the proposal under consideration. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a condominium or other collective form of ownership, the term abutter means the officers of the collective or association, as defined in RSA 356-B:3, XXIII. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a manufactured housing park form of ownership as defined in RSA 205-A:1, II, the term "abutter" includes the manufactured housing park owner and the tenants who own manufactured housing which adjoins or is directly across the street or stream from the land under consideration by the local land use board.
Source. 1983, 447:1. 1986, 33:2. 2002, 216:1, eff. July 15, 2002.

PLEASE PROVIDE NAMES & MAILING ADDRESSES FOR ALL PERSONS LISTED ABOVE.

Map & Lot Number: 92/33	**Map & Lot Number:** N/A APPLICANT
Property Owner: SPENCER STREET STORAGE, LLC P.O. BOX 317 ENFIELD, NH 03748	Applicant, Co-Applicant, Agent, or Lessee: FRANK J. BARRETT, JR AIA, ARCHITECT; 281 THE BEND ROAD; GREENSBORO BEND, VT 05842
Map & Lot Number: N/A CO-APPLICANT	**Map & Lot Number:** 92-34/4 SPENCER STREET
JENNIFER LAINE RUSSELL; NICK RUSSELL; 23 S. MAIN ST SUITE D; HANOVER, NH 03755	UPPER VALLEY SUPPORTIVE; 226 HOLIDAY DRIVE WHITE RIVER JCT., VT 05001
Map & Lot Number: 92-28/5-11.5 SPENCER ST	**Map & Lot Number:** 92-31/20 SPENCER STREET
5-11.5 SPENCER ST., LLC; 1 SCHOOL STREET UNIT A; LEBANON, NH 03766	CITY OF LEBANON, 51 NORTH PARK STREET; LEBANON, NH 03766

Map & Lot Number: RAIL TRAIL	Map & Lot Number: 92-29
STATE OF NEW HAMPSHIRE DOT; P.O. BOX 483; CONCORD, NH 03302	BISSON, HELEN L. 15 SPENCER STREET LEBANON, NH 03766
Map & Lot Number:	Map & Lot Number:
Map & Lot Number:	Map & Lot Number:
Map & Lot Number:	Map & Lot Number:
Map & Lot Number:	Map & Lot Number:
Map & Lot Number:	Map & Lot Number:
Map & Lot Number:	Map & Lot Number:

(Revised 2/8/2024)

SITE PLAN REVIEW

TOTAL DUE AT TIME OF FILING	$

**Engineering Review fees will also be required. See note on page 2.

SITE PLAN REVIEW AMENDMENT (WITH STRUCTURAL CHANGES)

		TOTALS
FILING FEE	$250.00	$250.00
SQUARE FOOTAGE	$75.00 per 1,000 sq. ft. (gross floor area)	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

**Engineering Review fees may also be required. See note below.

OTHER

-SITE PLAN REVIEW AMENDMENT (WITH NO STRUCTURAL CHANGES)
-EXTENSION REQUESTS
-CONDITIONAL USE PERMITS

		TOTALS
FILING FEE	$250.00	$250.00
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice e below) 5.00 X 7 notices	$5.00 $ 38.15 (abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

**Engineering Review fees may also be required. See note below. 393.15

MINOR SITE PLAN REVIEW

		TOTALS
FILING FEE	$150.00	$150.00
NOTIFICATION FEE **(see note below)**	Current USPS rate per certified notice (see below) X_____notices	$_____(abutter certifieds)
TOTAL DUE		$

ENGINEERING REVIEW FEES:

After an application to the Planning Board is submitted and the filing fees identified above have been paid, the Planning & Development Department will determine the scope of required engineering review and will obtain an estimated cost from the reviewing engineer. A cost estimate of the review fees will usually be generated within two (2) – three (3) business days. Once conveyed to the applicant, the estimated review fees shall be paid by the applicant within five (5) business days, and an escrow account shall be established by the Planning & Development Department. No plans will be reviewed unless and until the review fee estimate is paid, if required.

Please note that escrow fees are only an estimate of what services will cost and actual costs of review may be less or more than the amount initially estimated. Any unused portion of the escrow will be returned to the applicant at the end of the approval process if such a surplus remains. Additionally, in the event the escrow amount does not cover the full cost of services the Applicant shall pay any remaining costs as a condition of approval. See also Section 4.7 of the Site Plan Review Regulations and Section 7.7 of the Subdivision Regulations.

NOTIFICTION FEE: CURRENT FEE as of January 2024 Is $5.54 per certified notice

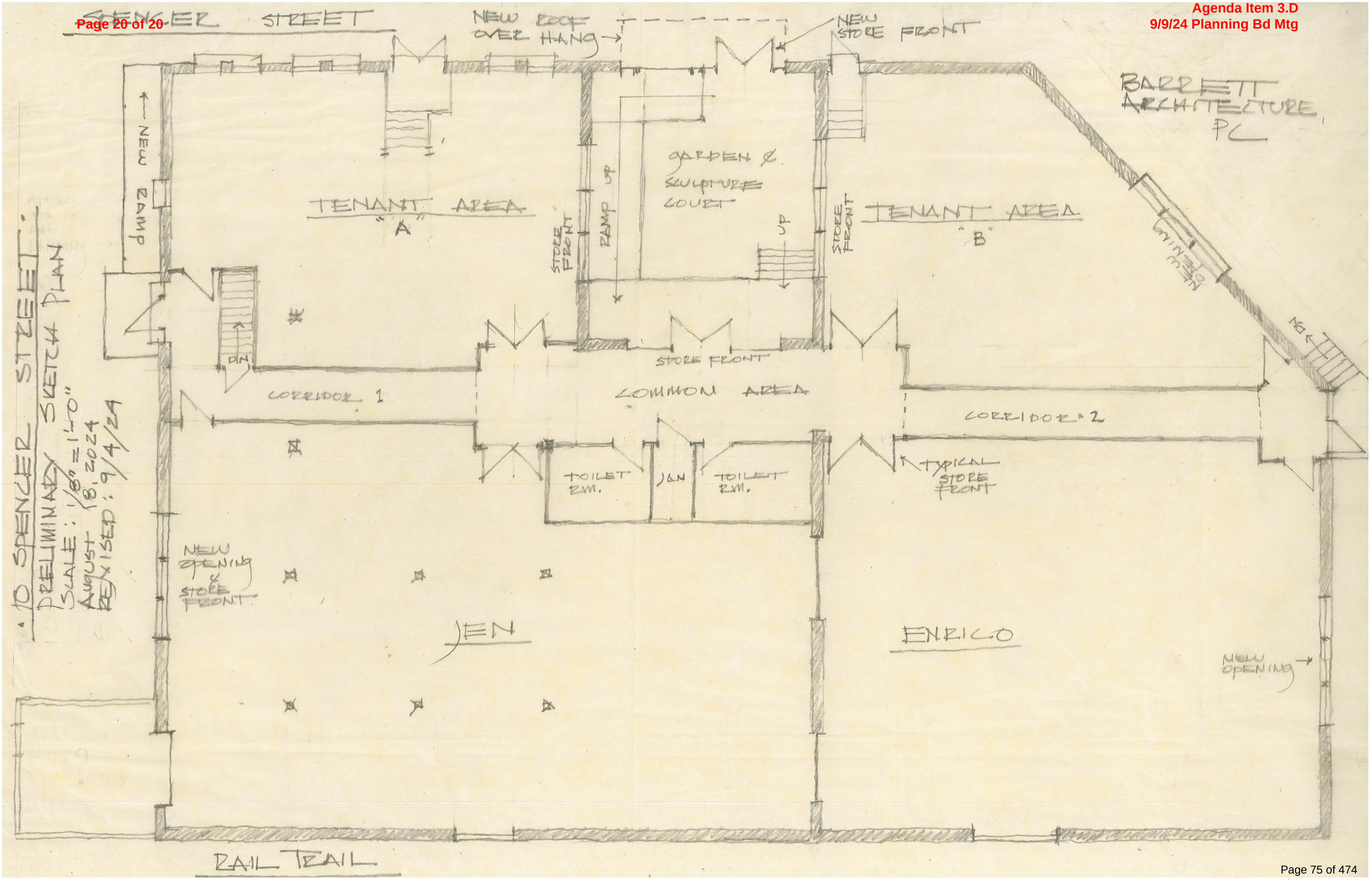
THE CERTIFIED NOTIFICATION FEE IN ALL SECTIONS ABOVE INCLUDES THE FOLLOWING: ALL ABUTTERS, THE APPLICANT, PROPERTY OWNER, HOLDER OF CONSERVATION, PRESERVATION, OR AGRICULTURAL PRESERVATION RESTRICTION(S); AND EVERY ENGINEER, ARCHITECT, LAND SURVEYOR OR SOIL SCIENTIST WHOSE PROFESSIONAL SEAL APPEARS ON ANY PLAT SUBMITTED TO THE BOARD AND ANY OTHER PERSONS REQUIRED BY RSA 676:4, I(d).

08/19/2024 12:08

08/19/2024 12:07

08/19/2024 12:07

08/19/2024 12:08


SPENCER STREET
NEW ROOF OVER HANG
NEW STORE FRONT
BARRETT ARCHITECTURE PC
NEW RAMP
TENANT AREA "A"
STORE FRONT
RAMP UP
GARDEN & SCULPTURE COURT
UP
TENANT AREA "B"
STORE FRONT
NEW OPENING
DN
STORE FRONT
CORRIDOR 1
COMMON AREA
CORRIDOR 2
TOILET RM.
JAN
TOILET RM.
TYPICAL STORE FRONT
NEW OPENING & STORE FRONT
JEN
ENRICO
NEW OPENING
RAIL TRAIL
10 SPENCER STREET
PRELIMINARY SKETCH PLAN
SCALE: 1/8" = 1'-0"
AUGUST 18, 2024
REVISED: 9/4/24

CITY OF LEBANON
APPLICATION FOR

SPECIAL EXCEPTION	☐	☒	SITE PLAN REVIEW
VARIANCE	☐	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☒	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT):

NAME: LWM Residential LLC, c/o Jon Livadas TEL.#: 302-598-3492

MAILING ADDRESS: 1 Guyenne Rd, Wilmington, DE 19807

E-MAIL ADDRESS: jon.livadas@outlook.com

CO-APPLICANT, AGENT, OR LESSEE:

NAME: Engineering Ventures PC, Nicholas Fiore TEL.#: 603-727-7029

MAILING ADDRESS: 85 Mechanic St, Suite E2-3, Lebanon, NH 03766

E-MAIL ADDRESS: nikf@engineeringventures.com

PROJECT LOCATION:

TAX MAP #: 91 & 106 LOT#: 263 & 34 PLOT #: ZONE: LD

STREET ADDRESS OF PROJECT: 1 Foundry St & 43 Mechanic St.

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☒ YES ☐ NO **HISTORIC DISTRICT** ☐ YES ☒ NO

FLOOD PLAIN ☒ YES ☐ NO

SCOPE OF PROJECT:

Modification to approved site plan PB2022-36-SPR and PB2023-38-SPA with revised building, parking, and site configurations. CUP pursuant to Zoning Ordinance Section 307.9, B.

TYPE OF OCCUPANCY:

EXISTING ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☒ MULTI-FAMILY ☒ COMMERCIAL ☐ INDUSTRIAL
PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☒ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC** USE:_____

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on September 9, 2024, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER:_____ DATE: 8/8/2024

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER:_____ DATE:_____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - $ AMOUNT	DATE PAID	VOUCHER #

(Last Revised 4/04/18)

ENGINEERING VENTURES PC

208 Flynn Avenue, Suite 2A, Burlington, VT 05401 · Tel: 802-863-6225
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766 · Tel: 603-442-9333
414 Union Street, Schenectady, NY 12305 · Tel: 518-630-9614

August 12, 2024

City of Lebanon Planning & Development Department
Attn: Tim Corwin, Senior Planner and Zoning Administrator
51 North Park St
Lebanon, NH 03766

RE: Lebanon Woolen Mill SPR Amendment & CUP Application
Tax Map 91 Lot 263

Dear Mr. Corwin,

On behalf of LWM Residential LLC, Engineering Ventures is please to submit Site Plan Review Amendment and Conditional Use Permit applications for the Lebanon Wollen Mill project located at 1 Foundry Street (Tax Map 91 Lot 263). The previous approvals for this project are City of Lebanon file numbers PB2022-36-SPR and PB2023-38-CUPSPA.

The major changes from the approved plans include:

- A new building at 25 Mechanic Street is no longer part of the project, and a parking lot is programed for that space instead.
- The number of dwelling units changes from 183 to 148.
- Building 2 will be demolished instead of renovated and replaced with a parking lot.
- The parking garage is reconfigured.
- The number of parking spaces change from 213 to 239.
- The Mill Yard is reconfigured.
- Additional transformers are added to the site for a total of three (3).
- Additional ADA parking spaces are added along the Mill Building.
- A secondary egress and walkway is added to the Boiler Building.
- Site lighting is revised to complement the site layout revisions.
- Landscaping is revised to complement the site layout revisions.

As part of the revised Lebanon Woolen Mill site plans, the project now includes a parking area along Mechanic Street, which is considered to be in the front yard of the lot. As such, the project seeks a Conditional Use Permit pursuant to Article III Section 307.9, of the Zoning Ordinance. All other viable spaces for parking within the lot are slated to be occupied by buildings, parking, and important pedestrian spaces. The project includes parking below one building (Building 3) and a 2-level parking structure, maximizing those options.

Thank you for your time and consideration with this project. We look forward to reviewing this project with the City staff and the Lebanon Planning Board. In the meantime, please do not hesitate to call or email if you have any questions or need additional information.

Sincerely,
ENGINEERING VENTURES, PC

Nicholas A. Fiore, PE
Vice President

CC: Jon Livadas, LWM Residential LLC

Enc: SPR Application Form, Checklist, Fee Calculation, & Notification List
CUP Application Form, Support Statement, Fee Calculation, & Notification List
Plan Set (55 pages)

City of Lebanon, New Hampshire

APPLICATION FOR CONDITIONAL USE PERMIT SUPPORT STATEMENT

Office Use Only Date Received: _____ Application No.: _____

I. APPLICATION CHECKLIST

- *Application form*
- *Public Hearing Notification List*
- *Filing fee*
- *This form, including written responses to the Section 302.4.D requirements, outlined below*
- *A site plan*
- *Optional: photos and any other materials in support of your application*

II. PROJECT DESCRIPTION

I (we) hereby request a Conditional Use Permit as provided for in Article(s) III, Section(s) 307.9, B, of the Lebanon Zoning Ordinance.

Please describe your proposed project with as much detail as possible. You can respond in the space provided below or on a separate sheet of paper.

As part of the redevelopment of the Lebanon Woolen Mill site at 1 Foundry Street (Lot 93-263), the project includes a parking area along Mechanic Street, which is considered to be in the front yard of the lot. All other viable spaces for parking within the lot are slated to be occupied by buildings, parking, and important pedestrian spaces. The project includes parking below one building (Building 3) and a 2-level parking structure, maximizing those options.

III. CONDITIONAL USE PERMIT CRITERIA

In order to obtain a Conditional Use Permit, you must demonstrate to the Planning Board that the proposal satisfies the applicable criteria set forth in Sections A and B below. You must address each criteria in the space provided or on a separate sheet of paper.

A. Specific Criteria

The Conditional Use Permit is authorized by Article III, Section 307.9, B of the Zoning Ordinance which requires the applicant to demonstrate that (*please address any criteria set forth in the Zoning Ordinance that specifically apply to your proposed use or project*):

Parking in the front yard of this lot in the LD Zoning District is acceptable because there is no other location on the lot to provide this parking.

B. General Criteria per Section 302.4.D

A conditional use permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following standards:

1. The site is suitable for the proposal. This includes:

   a. Adequate vehicular and pedestrian access for the intended use.

The site currently has two driveways off Mechanic Street which are not exactly perpendicular to the road. The plan includes consolidating the two existing driveways into one perpendicular driveway centered on the lot, which will be an improvement for users of the site and other drivers on Mechanic Street. One driveway crossing will also be a benefit to pedestrians.

   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

Adequate public services already exist in proximity to the site. The consolidation of the driveways will improves access and pedestrian facilities.

   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

Man-made steep slopes will be impacted by this piece of the project. They were created when the 25 Mechanic Street and 1 Foundry Street sited were developed. They will be rebuilt at similar slopes. All necessary erosion control measures will be installed and maintained during construction.
Floodplain, wetlands, and other environmental constraints are not present on the site.

   d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

Adequate electric service already exist in proximity to the site to serve site lighting. The project will implement stormwater management practices to treat and control runoff. No other utilities will be impacted by this piece of the project.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

Use of the area in question will be residential in nature and be used in the same way as many of the abutting properties. Stormwater will be routed through the 1 Foundry site which will result in positive impacts to

Mechanic Street and preclude excess runoff and risk of erosion, sedimentation, and other potentially adverse on-site or off-site effects.

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

The Mechanic Street neighborhood has ample instances of parking in the front yard. Examples in the LD district close the project are at 1 Mechanic St (Lot 91-264), 1 High St (Lot 91-226), 18 Mascoma St (Lot 91-260), 2 Mascoma St (Lot 91-254), 0 Water St (Lot 91-255), 17 Mascoma St (Lot 91-228), and 0 Hanover St (Lot 91-230). Examples outside of the LD district but close to the project include 6 Mechanic St (Lot 91-281) and 85 Mechanic St (Lot 106-46). 39 Mechanic St (Lot 91-269) is adjacent to location of this request. It may technically meet the requirements of 307.9, B because the front on the building is on the ROW line. All of these properties have unscreened parking lots adjacent to the ROW. This project will provide a setback to the ROW and ample vegetative screening between the parking and the ROW.

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

Not applicable. No new buildings are proposed for 25 Mechanic Street.

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

No natural, cultural, historic, or scenic resources exist on the 25 Mechanic Street site.

CITY OF LEBANON, NH SITE PLAN REVIEW REGULATIONS TECHNICAL CHECKLIST	
PROJECT NAME: Lebanon Woolen Mill	
APPLICANT: LWM Residential LLC	**DATE:** 08/12/2024
GENERAL SUBMISSION REQUIREMENTS:	

All applications to the Planning Board for Site Plan Review must be submitted by <u>12:00 Noon</u> on the day of the filing cutoff. [§4.7.B] **Submissions must be accompanied by the following information or review of the application may be delayed:**

A properly completed and signed Application Form *(available at www.lebanonnh.gov)*. [§5.1.A]

The appropriate filing fees. [§5.1.B]

A written project description. [§5.1.C]

A list of the names and mailing addresses of all persons to be notified, by certified mail, of the public hearing. [§5.1.D]

A completed and signed Application for Waivers *(available at www.lebanonnh.gov)* [§5.1.G.3]

A completed and signed Technical Checklist *(available at www.lebanonnh.gov)*. [§4.7.B] *[Applicants must complete the entire checklist to ensure that all necessary information and materials have been provided with the application or that written requests for waivers have been properly provided in accordance with Article VII of the Site Plan Review Regulations, as appropriate.]*

Two (2) full-size sets of the Site Plan set. [§5.1.E]

A digital copy of the Site Plan set in .PDF format. [§5.1.F]

<u>NOTE</u>: Applications shall contain sufficient information to enable the City Staff and the Planning Board to evaluate the proposed development for compliance with the Zoning Ordinance, the Planning Board's Regulations, and other applicable City Codes, and for the Planning Board to make an informed decision.

All required application materials shall be submitted as a single inclusive package, including any appropriate waiver requests as permitted by the Regulations. Submission of a complete application package ensures that the review process by City Staff is as efficient and effective as possible.

The purpose of the filing deadline is to provide adequate time for City review of the proposal. Submission of any altered, additional, or substitute application materials required by Article V of these Regulations, subsequent to the filing deadline, other than as directed by City Staff, shall cause the application to be deemed untimely filed, and such application shall not be heard until a subsequent month.

PLAN SUBMITTAL TECHNICAL CHECKLIST:

NOTE: Site plan drawings shall include the information described below pursuant to Article V of the Lebanon Site Plan Review Regulations. Plans shall be submitted on sheets no larger than 24" x 36". Plan sets with multiple sheets shall include sheets of uniform size and be bound on the left edge. When more than three (3) sheets are required, an additional cover sheet shall be attached including a table of contents. A scale of not smaller than one (1) inch equals 40 feet is suggested. All lettering shall be of a size and type that is legible.

In order to facilitate the use of the City's Geographic Information System (GIS) for planning purposes, all surveys and engineered plans submitted for Site Plan Review shall utilize the NH State Plane Coordinate system and shall reference the North American Vertical Datum of 1988 (NAVD 88), unless prior approval to use an alternate coordinate system and/or vertical datum is granted by the Planning & Development Department.

A written request for waiver shall be required, pursuant to Article VII of the Site Plan Review Regulations, for any submission requirement for which the information or data is not provided by the applicant. [§5.1.G(4)] NOTE: The submission requirements described in paragraphs 5.1.E(1) through 5.1.E(4) shall not be waivable under the procedures of Article VII of the Site Plan Review Regulations. [§5.1.E]

[Checklist begins on following page]

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements	Info. Provided	Waiver Sought
5.1.E(1) - Vicinity sketch showing the location of the site in relation to the surrounding public street system (suggested scale: 1" = 500').	X	N/A
5.1.E(2) - Names and mailing addresses of the Applicant; the Owner(s) of record of the site; the Owners of abutting properties; and the Holders of any easements, rights of way, or other restrictions, based on the current records of the City Assessor available at City Hall, not more than 5 days before the date of filing of the application.	X	N/A
5.1.E(3) - Names and business addresses of the preparer(s) of the plan and every surveyor, engineer, architect, soil scientist, or wetlands scientist whose professional seal appears on any plan or document submitted to the Board.	X	N/A
5.1.E(4) - The following information shall be provided on the first page (or cover page, if applicable) of the Site Plan:		
a. Name of the City and County in which the development is proposed;	X	N/A
b. North arrow;	X	N/A
c. Scale of the plan;	X	N/A
d. Date of the plan and of any revisions to the plan; (NOTE: The date on the plan at the time of initial submission for application review shall be included on all subsequent submissions to the City. Any subsequent change(s) to the plan shall include a revision date and description of the revision(s).)	X	N/A
e. The following basic site information in TABLE FORM:		
1. Zoning designation for subject property;	X	N/A
2. Tax Map and Lot number(s) for subject property;	X	N/A
3. Area of lot;	X	N/A
4. Gross floor area of existing and proposed buildings/additions;	X	N/A
5. Number of existing and proposed on- and off-street parking spaces as a table. The table must identify (i) the number of required (minimum) parking spaces and the permitted (maximum) number of parking spaces and the calculations for each, (ii) future proposed, and (iii) existing parking capacity. If the site is part of an existing development or subdivision, the master table must provide such information for all related sites and phases, individually and as a project total;	X	N/A
6. Number of existing and proposed short- and long-term bicycle storage spaces;	X	N/A
7. Number of existing and proposed loading spaces;	X	N/A
8. Height of existing and proposed buildings/additions;	X	N/A
9. Number of stories and gross square footage of each;	X	N/A
10. Proposed use;	X	N/A
11. Required and proposed front, side, and rear yard setbacks	X	N/A
12. Maximum allowable lot coverage with existing and proposed calculations;	X	N/A
13. Indication of whether or not the property is subject to any City Overlay districts (for example, the Wetlands Conservation District or Flood Plain District) or to NHDES Shoreland Water Quality Protection jurisdiction.	X	N/A
5.1.E(5) - Current survey certified by a land surveyor licensed in New Hampshire, depicting the perimeter boundaries of the lot(s) of the proposed site, including compass bearings, distances, and lot areas, and depicting the location of any existing improvements on the property and the width and location of any rights-of-way and/or easements on the property.	O	❒

X = Included with this package
O = Included in original application materials

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(6) - Existing and proposed grades, including topographic contours, with spot elevations. Where the grade is less than 20%, the contours shall be at 2-foot intervals; otherwise they shall be at 5-foot intervals. All contours shall be referenced to USGS or FEMA Flood Insurance Rate Map (FIRM) datums, as appropriate. Existing topographic information shall be prepared by a professional engineer registered in New Hampshire or land surveyor licensed in New Hampshire.	O	❒
5.1.E(7) - Shape, size, height, and location of all existing structures located on site and within 200 feet of site.	O	❒
5.1.E(7) - Elevation views indicating shape, size, height, and location of all proposed structures, including expansions of or additions to existing buildings. Such elevation views shall provide sufficient detail to allow for review by the Board and City staff of the adequacy of proposed access and egress points, walkways, lighting, and other site-related improvements.	X	❒
5.1.E(8) - Location of existing natural features such as streams, marshes, lakes, ponds, wetlands, rock outcrops, or wooded areas, and existing man-made features such as roads and structures. Indicate those natural and man-made features that are to be removed, retained, or altered.	X	❒
5.1.E(8) - Wetlands on the property shall be delineated by a NH Certified Wetlands Scientist, whose seal and signature shall appear on the plan. Documentation in the form of U.S. Army Corps of Engineers New England District Wetlands Delineation Data Sheets and/or other field notes and materials concerning the delineation shall be submitted.	O	❒
5.1.E(9) - Zoning District, Tax Map and Lot number, and use of abutting properties within 200 feet of property.	O	❒
5.1.E(9) - Location of streets, pedestrian paths/trails, and bicycle routes within 200 feet of the site boundary; and the location of curb cuts and vehicle accesses within 200 feet of the site boundary.	O	❒
5.1.E(10) - Proposed streets, driveways, emergency vehicle accesses, parking spaces, and sidewalks, with indication of dimensions and direction of travel. Show required sight distances at curb cuts and dimensions for the inside radii of all curves.	X	❒
5.1.E(10) - Vehicle and bicycle parking spaces shall be numbered.	X	❒
5.1.E(10) - Loading spaces and facilities used in connection with any structures on the site shall be shown	X	❒
5.1.E(10) - Total square footage and percentage of the lot covered by impervious cover shall be shown.	X	❒
5.1.E(11) - Parking area safety measures including raised crosswalks/speed tables, signage, walkway lighting, striping and similar markings such as dedicated pedestrian/bicycle crossings and lanes through parking areas, fire lanes, compact and/or electric vehicle parking/charging, parking wayfinding, ADA signage and access aisles.	X	❒
5.1.E(12) - Size and location of all existing and proposed public and private utilities. *(Note: the applicant is encouraged to submit a Sewer Use Permit Application and obtain a Notice of Permitted Allocation, and to obtain a Water Use Permit prior to submission of the Site Plan Review application.)*	X	❒

X = Included with this package
O = Included in original application materials

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(13) - Plan for outdoor lighting showing proposed location, mounting height, fixture type, lamp type, color correlated temperature (CCT), and wattage of all exterior free-standing lighting or building-mounted fixtures.	X	❒
5.1.E(13) - Analyses and illuminance-level diagrams, to include average and minimum foot-candle measurements, showing that proposed installation conforms to the lighting-level standards in Site Plan Review Regulations.	X	❒
5.1.E(13) - Manufacturer's specification information for each proposed light fixture and lamp (NOTE: This information may be provided on the plan or as a separate attachment).	X	❒
5.1.E(13) - Drawings of all relevant building elevations showing location and height of all building-mounted fixtures, the portions of any walls or architectural features to be illuminated, illumination levels of walls or architectural features, and aiming points for any remote light fixtures.	X	❒
5.1.E(14) - Plan for location of free-standing or building-mounted signs, including location, mounting, aiming, and shielding of any remote light fixtures for externally-lit signs.	X	❒
5.1.E(14) - For internally-lit signs, relevant information concerning the method of illumination and the opacity of the sign background, showing that the proposed installation conforms to the requirements of the Regulations.	N/A	❒
5.1.E(15) - The location and boundaries of any Overlay Districts established pursuant to Article IV of the Zoning Ordinance (including but not limited to the Wetlands Conservation District, Riverbank Protection District, Steep Slopes District, and Floodplain District) and, if applicable, protected shorelands pursuant to the Shoreland Water Quality Protection Act (NH RSA 483-B).	X	❒
5.1.E(15) - For properties located within the Floodplain District, the 100-year flood elevation, floodway, shoreland protection zone, and flood plain limits shall be identified.	X	❒
5.1.E(16) - Landscaping plan showing proposed new plantings to be installed and existing natural vegetation to be retained. Plan shall show in detail the number, size (height and/or caliper), and species (botanical and common names) of all proposed shrubs and trees.	X	❒
5.1.E(16) - Existing trees over 12 inches in diameter (measured 4.5 feet above ground surface) within 25 feet of the disturbed area, must be counted and shown on the plan, if included towards fulfilling landscaping requirements.	X	❒
5.1.E(16) - Calculations for square footage of perimeter landscaping.	X	❒
5.1.E(16) - Parking lot shading calculations shall be provided by depicting new trees and shrubs at 10-year crown size.	X	❒
5.1.E(17) - Existing and proposed surface and subsurface storm drainage facilities, including City storm drainage facilities located within 200' of site.	X	❒
5.1.E(17) - Plans for retention, detention, slow release, and treatment of storm water shall be provided shall be provided in accordance with the requirements of Section 6.6.	X	❒
5.1.E(18) – Section 6.6. Stormwater Management submission requirements.	See Stormwater Checklist	
5.1.E(19) - Plans for snow removal and storage.	X	❒

X = Included with this package
O = Included in original application materials

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(20) - A plan for the development showing provisions for automobile, transit, bicyclist, and pedestrian access and circulation. Such plan shall show both existing and proposed means of access to the site including connections with, public streets, sidewalks, transit stops, and formal paths/trails. Plans shall include any traffic calming and traffic control devices necessary in conjunction with the site development, as well as the location of all existing transit routes and transit stops located or passing within 1/4 mile (1,320 feet) of the property.	X	❒
5.1.E(21) - Construction detail drawings including, but not limited to, pavements, walks, steps, curbing, drainage structures, water and/or sewer utilities, ground-mounted signage (e,g,, fire lanes, ADA parking, commercial), surface treatments, transit shelters, energy generation units (e.g., solar), bike rack style, electric vehicle charging, outdoor lighting, outdoor furniture, retaining walls, tree boxes and other site systems or structures. Accompanying specifications and cutsheets may be required.	O	❒
5.1.E(21) - Where applicable, roadway, drainage, water and sewer utility profile drawings shall be provided at a scale of 1"=40 feet (horizontal) and 1"=4 feet (vertical) and typical cross-section drawings shall be provided at a scale of 1"=5 feet (horizontal and vertical), unless prior approval to use an alternate scale is granted by the Reviewing Engineer. (NOTE: Ordinarily, only two (2) sets of such construction drawings shall be provided to the Planning and Development Department with the application submission.)	X	❒
5.1.E(22) - Depict any current and proposed easements, rights-of-way, and deed restrictions including those related to sewer, electrical utility, shared access, etc.	X	❒
5.1.E(23) - For multi-family structures, plans for on-site recreational facilities.	X	❒
5.1.E(24) - Where a fire, emergency equipment, or similar vehicle turnaround area is provided, it must have an adequate turn radius. Provide CAD Autoturn data or a similar basis of design for the turn radius, if requested by Lebanon Fire or Engineering staff. City staff may also ask for this information at any time.	O	❒
Supporting Documents and Information, Where Applicable	**Info. Provided**	**Not Applicable**
5.1.G(1) - An estimated timetable, to include phasing schedules, for construction and completion of buildings, parking, facilities, landscaping, and other required improvements.	X	❒
5.1.G(2) - Any development estimated to generate a net increase of 100 peak hour trips or 1,000 average daily trips (based upon the most current edition of the ITE Trip Generation Manual) shall prepare and submit a Traffic Impact Study in accordance with standard traffic analysis conventions as set forth by the NHDOT. The Board may, at its discretion, require the submission of a Traffic Impact Study for developments estimated to generate less than 100 peak hour trips or 1,000 average daily trips if the Board has reason to believe such development could adversely affect levels of service or have other adverse impacts.	O	❒
5.1.G(3) – Written requests for waivers from all applicable provisions of these Regulations shall be provided pursuant to Article VII – "Waiver Procedure". *(note: use Application for Waivers form).*	O	❒
5.1.G(4) – For multi-family dwelling developments and mixed-use developments resulting in a net increase of 50 dwelling units or more, the application shall include the information and impact statements identified in Section 6.9.B.	O	❒

NOTE: THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE REQUIRED INFORMATION PURSUANT TO ARTICLE V OF THE SITE PLAN REVIEW REGULATIONS. PLEASE BE AWARE THAT THIS CHECKLIST IS FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT REPRESENT THE LAW DICTATING SUBMITTAL REQUIREMENTS NOR IS IT COMPLETE AND INCLUSIVE THEREOF.

Completed By: Nicholas A. Fiore - Engineering Ventures

X = Included with this package
O = Included in original application materials

CITY OF LEBANON, NH STORMWATER REVIEW REGULATIONS TECHNICAL CHECKLIST	
PROJECT NAME: Lebanon Woolen Mill	
APPLICANT: LWM Residential LLC	**DATE:** 08/12/2024

NOTE: Stormwater plans shall include the information described below pursuant to Article VI of the Lebanon Site Plan Review Regulations. Plans shall be submitted on sheets no larger than 24" x 36". Plan sets with multiple sheets shall include sheets of uniform size and be bound on the left edge. When more than three (3) sheets are required, an additional cover sheet shall be attached including a table of contents. A scale of not smaller than one (1) inch equals 40 feet is suggested. All lettering shall be of a size and type that is legible.

In order to facilitate the use of the City's Geographic Information System (GIS) for planning purposes, all surveys and engineered plans submitted shall utilize the NH State Plane Coordinate system and shall reference the North American Vertical Datum of 1988 (NAVD 88), unless prior approval to use an alternate coordinate system and/or vertical datum is granted by the Planning Office.

A written request for waiver shall be required, pursuant to Article VII of the Site Plan Review Regulations, for any submission requirement for which the information or data is not provided by the applicant. [§6.6.I]

PROVIDED WITH ORIGINAL APPLICATION
NO CHANGES WITH REVISED PLAN

[Stormwater checklist begins on following page]

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements	Info. Provided	Waiver Sought
6.6.C.1 (1) - An Existing Conditions S.M.P showing all pre-development:		
a. Surface water bodies and wetlands	❒	❒
b. Drainage patterns	❒	❒
c. Flood plains and floodways (with elevations)	❒	❒
d. Watershed boundaries	❒	❒
e. Buffer zones	❒	❒
f. Topographic contours with minimum 2-foot intervals	❒	❒
g. Buildings / structures	❒	❒
h. Pavement	❒	❒
i. Utilities	❒	❒
j. Soils information with coding as HSG-A, B, C, or D (High Intensity Soil Survey (HISS) mapping may be required per request of the City Engineer).	❒	❒
1. The plan shall also include the following elements:		
a. scale bar	❒	❒
b. north arrow	❒	❒
c. title block with project name	❒	❒
d. applicant's name	❒	❒
e. map and parcel number	❒	❒
f. designer's stamp	❒	❒
g. soil and/or wetland scientist's stamp (if applicable)	❒	❒
h. legend	❒	❒
i. locus plan	❒	❒
j. benchmarks	❒	❒
k. notes with datum and other plan references	❒	❒
l. instructions	❒	❒
m. detail descriptions	❒	❒
6.6.C.1 (2) - A Proposed Conditions SMP showing all proposed post-development temporary and permanent stormwater management system elements, erosion and sediment control Best Management Practices (BMP), and all important hydrologic features. The Proposed Conditions S.M.P must be at the same scale as the Existing Conditions SMP, with consistent title block, plan features, and descriptors including but not limited to the following:		
a. Existing and proposed topographic contours (2-foot minimum contour interval; 1-foot contour intervals may be required for sites with limited relief and/or where proposed stormwater outfalls are located adjacent to buffer zones.	❒	❒
b. Proposed areas of disturbance with total area of disturbance clearly labeled in square feet	❒	❒
c. Existing and proposed buildings and structures	❒	❒
d. Stormwater discharge locations labeled and matched to the drainage analyses	❒	❒
e. Wells and sanitary protective radii, if applicable	❒	❒
f. Septic systems, if applicable	❒	❒

Plan Requirements (*cont.*)	**Info. Provided**	**Waiver Sought**
g. Plan references and notes (including sequence of soil disturbance)	❒	❒
h. Proposed and existing public and private utilities	❒	❒
i. Proposed project components to become property of or the responsibility of the City shall be labeled as such	❒	❒
j. Existing and proposed impervious cover, with areas used to calculate effective impervious cover (EIC, as defined herein) clearly identified and the square footage of each type identified and labeled.	❒	❒
k. Test Pit(s) locations and data where stormwater practices are proposed, as appropriate.	❒	❒
l. Details of individual design elements shown on separate plan sheets following the Proposed Conditions SMP. The Existing Conditions SMP & the Proposed Conditions SMP shall be provided on sheets no larger than 24" x 36", at a scale of one (1) inch = 20 feet for urban areas, and one (1) inch = 40 feet for non-urban areas. The City Engineer will make the final determination as to the appropriate scale, ensuring that all important site and hydrologic features are easily recognized. If plan shall encompass more than two (2) sheets, at the required 1:40 or 1:20 scale, a separate large scale representation plan sheet (e.g. 1:100) is required to be provided, so as to show entirety of site, as well as off-site contributing areas.	❒	❒
6.6.C.2 - In addition to the above described SMP plan sheets, the following SMP supplemental information is required: 1. A drainage analysis that includes calculations comparing pre- and post-development stormwater runoff rates (cubic feet per minute) and volumes (cubic feet) based on a 1-inch rainstorm, and the 2-year, 25-year, 50-year, and 100-year, 24-hour frequency storms. Calculations shall include, but not be limited to, the sizing of all structures and BMPs, including sizing of emergency overflow structures based on the 50-year 24-hour frequency storm discharge rate, with 1-foot of free-board. Storm rates shall be based on current design depths from the Northeast Regional Climate Center - http://precip.eas.cornell.edu. *Any site that was primarily wooded in the last five years shall be considered undisturbed woods Any site from which wooded vegetation has been removed within 5 years prior to the first submission to the planning board with respect to a proposed development, or upon which, at some earlier time, clearing has occurred in anticipation of development, shall be treated as undisturbed woodland for purposes of calculating pre-development runoff volumes. For purposes of this paragraph any tree cutting which occurred without leaving stands of healthy, growing trees within areas near waters and highways, as required by RSA 227-J:9, I, shall be presumed to have occurred in anticipation of development*	❒	❒

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements (*cont.*)	**Info. Provided**	**Waiver Sought**
2. A drainage analysis results summary tabulated (pre & post) for each proposed outfall or catchment outlet point including runoff rates and volumes for each storm event analyzed above.	❒	❒
3. An Erosion and Sediment Control Plan for all proposed construction activities in accordance with the NH Stormwater Management Manual Volume 3, (December 2008 or current revision; downloadable from the website)	❒	❒
4. A comprehensive Operation and Maintenance Plan for long-term maintenance of all proposed stormwater management elements and BMPs including the proposed schedule of inspections and anticipated maintenance (see section H.2 Operations & Maintenance Plan for detailed requirements).	❒	❒
6.6.D - Phased Development: For phased developments, the plans and calculation requirements under this section (6.6) shall apply as though the development of the entire parcel were being proposed in one single application. The review and approval process for phased development applications is provided in section 4.9 of the Lebanon Site Plan Regulations.	❒	❒

NOTE: THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE REQUIRED INFORMATION PURSUANT TO ARTICLE VI OF THE SITE PLAN REVIEW REGULATIONS. PLEASE BE AWARE THAT THIS CHECKLIST IS FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT REPRESENT THE LAW DICTATING SUBMITTAL REQUIREMENTS NOR IS IT COMPLETE AND INCLUSIVE THEREOF.

Completed By: _____

(Last Revised 9/20/2021)

Planning office Use Only:

Date Received___/___/___ Checklist Complete YES or NO Checked by:_____

CERTIFIED NOTIFICATION LIST

Notice shall be sent by certified mail to the Owner; Applicant, if different from Owner; Abutters; Holders of conservation, preservation, or agricultural preservation restrictions (as defined under RSA 477:45) on the subject property; the holders of easements, rights-of-way, and other restrictions; and every engineer, architect, land surveyor, or soil or wetlands scientist whose seal appears on any plan submitted to the Board; and any other persons required by RSA 676:4, I(d). The names and mailing addresses shall be furnished by the Applicant.

672:3 Abutter. – "Abutter" means any person whose property is located in New Hampshire and adjoins or is directly across the street or stream from the land under consideration by the local land use board. For purposes of receiving testimony only, and not for purposes of notification, the term "abutter" shall include any person who is able to demonstrate that his land will be directly affected by the proposal under consideration. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a condominium or other collective form of ownership, the term abutter means the officers of the collective or association, as defined in RSA 356-B:3, XXIII. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a manufactured housing park form of ownership as defined in RSA 205-A:1, II, the term "abutter" includes the manufactured housing park owner and the tenants who own manufactured housing which adjoins or is directly across the street or stream from the land under consideration by the local land use board.
Source. 1983, 447:1. 1986, 33:2. 2002, 216:1, eff. July 15, 2002.

PLEASE PROVIDE NAMES & MAILING ADDRESSES FOR ALL PERSONS LISTED ABOVE.

Map & Lot Number: 91-263, 106-33, 106-34	**Map & Lot Number:** 91-263
Property Owner: LWM RESIDENTIAL LLC 1 GUYENNE RD WILMINGTON, DE 19807	Applicant, Co-Applicant, Agent, or Lessee: LWM RESIDENTIAL LLC 1 GUYENNE RD WILMINGTON, DE 19807
Map & Lot Number: 91-258	**Map & Lot Number:** 91-259
CC&C OF LEBANON LLC PO BOX 51687 NEW BEDFORD, MA 02745	WATER STREET MILL LLC 10 WATER ST, STE 190 LEBANON, NH 03766
Map & Lot Number: 91-262	**Map & Lot Number:** 91-264
FSP LLC PO BOX 1325 LEBANON, NH 03766	ONE MECHANIC STREET LLC PO BOX 1325 LEBANON, NH 03766

Map & Lot Number: 91-265	**Map & Lot Number:** 91-266, 91-280
CLARENCE LLC PO BOX 2172 LEBANON, NH 03766	BGP PROP LLC PO BOX 1325 LEBANON, NH 03766
Map & Lot Number: 91-269	**Map & Lot Number:** 91-277, 91-278, 106-36
DM DEVELOPMENT LLC PO BOX 318 GRANTHAM, NH 03753	ACORN TO SKY INVESTMENTS LLC 84 HANOVER ST LEBANON, NH 03766
Map & Lot Number: 106-20	**Map & Lot Number:** 106-24
GILBERT, WILLIAM & JUDITH 16 HIGH ST LEBANON, NH 03766	LINDSAY FORSYTH 5 BROOKSIDE DR LEBANON, NH 03766
Map & Lot Number: 106-25	**Map & Lot Number:** 106-30, 106-32
MCCARTHY, PATRICK S TTEE 6 BROOKSIDE DR LEBANON, NH 03766	CITY OF LEBANON 51 NORTH PARK ST LEBANON, NH 03766
Map & Lot Number: 106-42	**Map & Lot Number:** 106-46, 106-46-907, 106-46-A
FLYNN, DALE 15 BLACKSMITH ST LEBANON, NH 03766	RIVERMILL COMMER CTR LLC 85 MECHANIC ST, STE 140 LEBANON, NH 03766
Map & Lot Number:	**Map & Lot Number:**
ENGINEERING VENTURES, PC ATTN NICHOLAS FIORE 85 MECHANIC STREET, SUITE E2-3 LEBANON, NH 03766	OJB LANDSCAPE ARCHITECTS ATTN GRACE SHAINE WONG, PLA ONE BOWDOIN SQUARE, SUITE 801 BOSTON, MA 02114
Map & Lot Number:	**Map & Lot Number:**
RODE ARCHITECTS ATTN RUTHIE KUHLMAN AIA 535 ALBANY STREET, SUITE 405 BOSTON, MA 02118	

(Revised 2/8/2024)

Map & Lot Number: 91-273	**Map & Lot Number:** 91-274
GIBSON, LUCY 42 MECHANIC ST LEBANON, NH 03766	ALBEE, JENNIFER E 40 MECHANIC ST LEBANON, NH 03766
Map & Lot Number: 106-38	**Map & Lot Number:** 91-272
SANTANA, JORGE 3 BLACKSMITH ST LEBANON, NH 03766	KEITH CULVER PO BOX 5246 LEBANON, NH 03766
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**

(Revised 2/8/2024)

FEE SCHEDULE
LEBANON PLANNING BOARD
Adopted January 24, 2022

LOT LINE ADJUSTMENT (Boundary Line Adjustment)

		TOTALS
FILING FEE	$25.00	$25.00
ADVERTISING FEE	$100	$100
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE		$

MINOR SUBDIVISION

		TOTALS
FILING FEE	$150.00	$150.00
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

****Engineering Review fees may also be required. See note on page 2.**

PRELIMINARY REVIEW OF A MAJOR SUBDIVISION

		TOTALS
FILING FEE	$200.00	$200.00
NUMBER OF LOTS* _____	$30.00 per lot*	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

****Or units when the subdivision does not create individual lots.***

****Engineering Review fees will also be required. See note on page 2.**

FINAL REVIEW OF A MAJOR SUBDIVISION

		TOTALS
FILING FEE	$500.00	$500.00
FIRST FIVE (5) LOTS*	$75.00 per lot*	
NUMBER OF LOTS 6+*	$150.00 per lot*	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE TIME OF FILING		$

****Or units when the subdivision does not create individual lots.***

****Engineering Review fees will also be required. See note on page 2.**

SITE PLAN REVIEW

		TOTALS
FILING FEE	$250.00	$250.00
SQUARE FOOTAGE	$75.00 per 1,000 sq. ft. (gross floor area)	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)

Form last revised on 07/15/2024 Postage increase

SITE PLAN REVIEW

TOTAL DUE AT TIME OF FILING		$
****Engineering Review fees will also be required. See note on page 2.**		

SITE PLAN REVIEW AMENDMENT (WITH STRUCTURAL CHANGES)

		TOTALS
FILING FEE	$250.00	$250.00
SQUARE FOOTAGE	$75.00 per 1,000 sq. ft. (gross floor area)	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$
****Engineering Review fees may also be required. See note below.**		

OTHER

-SITE PLAN REVIEW AMENDMENT (WITH NO STRUCTURAL CHANGES)
-EXTENSION REQUESTS
-CONDITIONAL USE PERMITS

		TOTALS
FILING FEE	$250.00	$250.00
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice (see below) X 21 notices	$5.00 $ 116.34 (abutter certifieds)
TOTAL DUE AT TIME OF FILING		$ 471.34
****Engineering Review fees may also be required. See note below.**		

MINOR SITE PLAN REVIEW

		TOTALS
FILING FEE	$150.00	$150.00
NOTIFICATION FEE **(see note below)**	Current USPS rate per certified notice (see below) X_____notices	$_____(abutter certifieds)
TOTAL DUE		$

ENGINEERING REVIEW FEES:

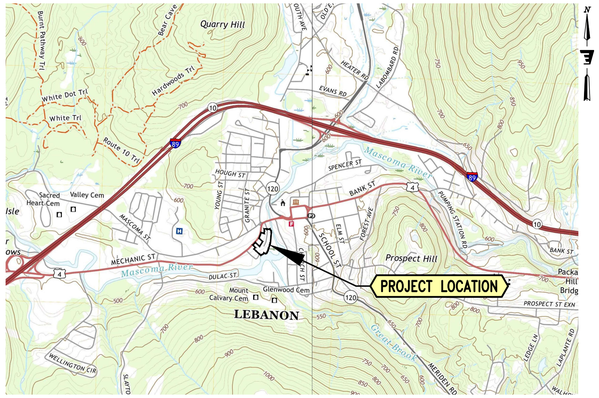
After an application to the Planning Board is submitted and the filing fees identified above have been paid, the Planning & Development Department will determine the scope of required engineering review and will obtain an estimated cost from the reviewing engineer. A cost estimate of the review fees will usually be generated within two (2) – three (3) business days. Once conveyed to the applicant, the estimated review fees shall be paid by the applicant within five (5) business days, and an escrow account shall be established by the Planning & Development Department. No plans will be reviewed unless and until the review fee estimate is paid, if required.

Please note that escrow fees are only an estimate of what services will cost and actual costs of review may be less or more than the amount initially estimated. Any unused portion of the escrow will be returned to the applicant at the end of the approval process if such a surplus remains. Additionally, in the event the escrow amount does not cover the full cost of services the Applicant shall pay any remaining costs as a condition of approval. See also Section 4.7 of the Site Plan Review Regulations and Section 7.7 of the Subdivision Regulations.

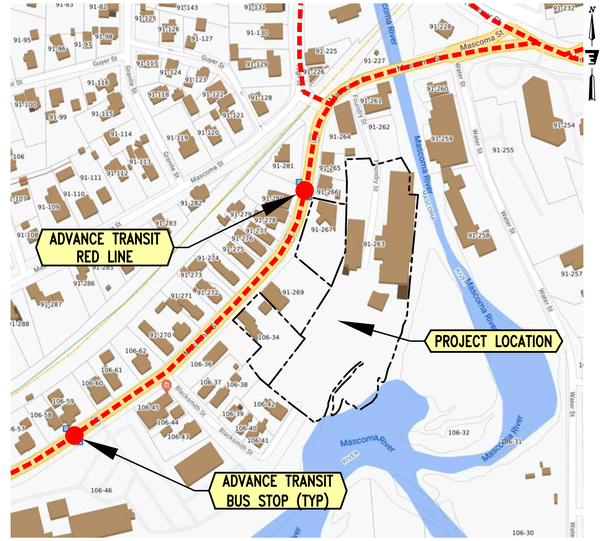
NOTIFICTION FEE: CURRENT FEE as of January 2024 is $5.54 per certified notice

THE CERTIFIED NOTIFICATION FEE IN ALL SECTIONS ABOVE INCLUDES THE FOLLOWING: ALL ABUTTERS, THE APPLICANT, PROPERTY OWNER, HOLDER OF CONSERVATION, PRESERVATION, OR AGRICULTURAL PRESERVATION RESTRICTION(S); AND EVERY ENGINEER, ARCHITECT, LAND SURVEYOR OR SOIL SCIENTIST WHOSE PROFESSIONAL SEAL APPEARS ON ANY PLAT SUBMITTED TO THE BOARD AND ANY OTHER PERSONS REQUIRED BY RSA 676:4, I(d).

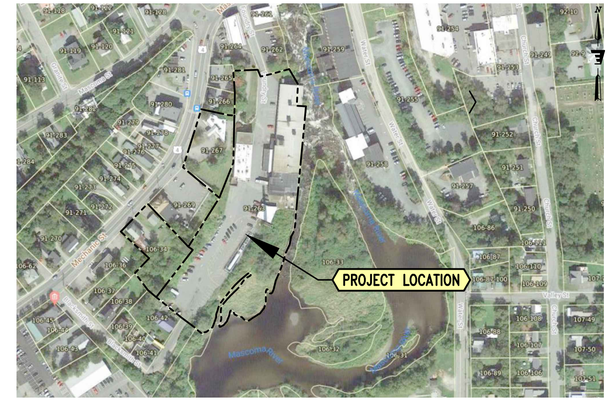
LEBANON WOOLEN MILL



USGS MAP
1"=2,000'



LEBANON GIS MAP
1"=200'



AERIAL PHOTOGRAPH
1"=250'

ZONING TABLE – 1 FOUNDRY & 25 MECHANIC

	Zoning Limit	Existing	Proposed Total	Notes
Zoning District		LDD	LDD	
Tax Map / Lot #		91-263	91-263	1
Use		Commercial	Multi-Family Res	
Area of Lot (acres)	3,000 s.f. min.	4.203	4.203	1
Building Footprint (s.f.)		34,030	51,703	
Existing Mill		23,425	23,425	
Building 2		6,411	0	
Building 3		0	16,041	
Boiler Building		1,777	1,777	
25 Mechanic		2,417	0	
Parking Structure		0	10,460	
Building Coverage	No Limit	18.6%	28.2%	
Building Gross Floor Area (s.f.)		79,139	158,002	2
Existing Mill		57,753	57,753	
Building 2		14,364	0	
Building 3		NA	77,006	
Boiler Building		2,323	2,323	
25 Mechanic		4,699	0	
Parking Structure		0	20,920	
Building Height	55' max.			
Existing Mill		30	30	
Building 2		27	0	
Building 3		NA	60'-6"	4
Boiler Building		13	13	
25 Mechanic		14	0	
Parking Structure		0	18'	
Number of Stories				
Existing Mill		3	3	3
Building 2		3	2	
Building 3		NA	6	3
Boiler Building		2	2	3
25 Mechanic		1	0	3
Parking Structure		0	2	3
Parking Spaces Provided		55+/-	235	
Surface		55+/-	92	
Mill Building Structure		0	71	
Building 3 Garage		-	46	
Off-Lot		0	26	
Parking Spaces Required	per 607.4	0	0	
Parking Spaces Required	per 607.1		206	
Max Parking Spaces Allowed			247	
Loading Spaces		2	2	
Bicycle Parking Spaces (LT / ST)				
Existing Mill		0	15 / 8	
Building 3		NA	31 / 12	
Boiler Building		0	0 /0	
25 Mechanic		0	0	
Impervious Area (s.f.)		102,500	112,248	
Impervious Area (% of lot)		55.99%	61.31%	
Setbacks				
Front	0'	20.1	15	
Rear	10'	NA	NA	
Side	0'	40.5	22.1	
City Overlay Districts		Wetlands Floodplain Riverbank Protection	Wetlands Floodplain Riverbank Protection	
NHDES Shoreland Jurisdiction		Shoreland	Shoreland	

Notes:
1. Lots will be merged following Site Plan Approval per application PB2022-34-VLM
2. See Building Program schedule for square footage by floor
3. Number of Stories includes below grade building space
4. Conditional Use permit granted with original Site Plan Review approval.

ZONING TABLE – 43 MECHANIC

	Zoning Limit	Existing	Proposed Total	Notes
Zoning District		LDD	LDD	
Tax Map / Lot #		106-34	106-34	
Use		Multi-Family Res	Multi-Family Res	
Area of Lot (acres)	3,000 s.f. min.	0.544	0.524	
Building Footprint (s.f.)		2,635	1,778	
Building Coverage	No Limit	11.12%	7.79%	
Building Gross Floor Area (s.f.)		6,034	2,355	1
Building Height	55' max.	30+/-	30+/-	2
Number of Stories		4	4	3
Number of Dwelling Units		6	2	
Parking Spaces Provided		10+/-	4	5
Parking Spaces Required	per 607.4	0	0	
Max Parking Spaces Allowed		9	3	
Loading Spaces		0	0	
Bicycle Parking Spaces (LT / ST)		0	2 / 2	4
Impervious Area (s.f.)		9,160	12,570	
Impervious Area (% of lot)		38.65%	55.07%	
Setbacks				
Front	0'	5.7'	5.7'	2
Rear	10'	94.4'	134.9'	2
Side	0'	4.5'	7.7'	2
City Overlay Districts		None	None	
NHDES Shoreland Jurisdiction		Shoreland	Shoreland	

Notes:
1. See Building Program schedule for square footage by floor
2. Front half of existing house and existing garage to remain. No new structures.
3. Number of Stories includes below grade building space.
4. Long term pike parking in the garage, short term on the porch.
5. 4 spaces for 43 Mechanic St with remainder designated for 1 Foundry St use.

BUILDING PROGRAMS

		Studio	1-Bed	2-Bed	Total	Units	GSF	Parking - Garage	Parking - Exterior
Existing Mill	Level 0	0	0	0	0	49	14,704		28
	Level 1	12	8	2	22		21,251		
	Level 2	16	10	1	27		21,798		
	Level 3	0	0	0	0		0		
	Level 4	0	0	0	0		0		
	Total Units	28	18	3	49		57,753	28	
	Total Bedrooms	28	18	6	52				
Parking	Level 1	0	0	0	0	0	10,460	34	
	Level 2	0	0	0	0		10,460		37
	Total						20,920	71	
Boiler Building	Level 0	0	0	0	0	0	1,823		
	Level 1	0	0	0	0		500		
	Total						2,323	0	
Building 3	Level 0	0	0	0	0	97	917	39	
	Level 1	5	11	1	17		16,046		46
	Level 2	6	13	2	21		16,046		
	Level 3	6	13	2	21		16,046		
	Level 4	6	13	2	21		16,046		
	Level 5	6	10	1	17		11,905		
	Total Units	29	60	8	97		77,006	85	
	Total Bedrooms	29	60	16	105				
25 Mechanic Parking	Level 0	0	0	0	0	0	0	25	
	Total Units	0	0	0	0		0	25	
	Total Bedrooms	0	0	0	0				
43 Mechanic	Level 0	0	0	0	0	2	670		26
	Level 1	0	0	1	1		670	2	2
	Level 2	0	0	1	1		670		
	Level 3	0	0	0	0		345		
	Total Units	0	0	2	2		2,355	30	
	Total Bedrooms	0	0	4	4				

Project Totals		Studio	1-Bed	2-Bed	Total			Parking Spaces
	Units	57	78	13	148	148	160,357	239
	Bedrooms	57	78	26	161			
	Percentage	39%	53%	9%	100%			

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OWNER\APPLICANTS:

LWM RESIDENTIAL LLC
1 GUYENNE ROAD
WILMINGTON, DELEWARE 19807

SUBJECT PARCELS:

TAX MAP 91 LOTS 263 AND 267
TAX MAP 106 LOT 34
CITY OF LEBANON
GRAFTON COUNTY
NEW HAMPSHIRE, 03766

SITE PLAN REVIEW AMENDMENT

RODE
535 Albany Street | 405
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One Bowdoin Square, Suite 801
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1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	PLANNING COMMENTS	10.17.22
2	FSPR AMENDMENT SUBMISSION	10.09.23
3	FSPR SUBMISSION	12.06.23
4	NOA CONFORMED	01.25.24
5	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.2022

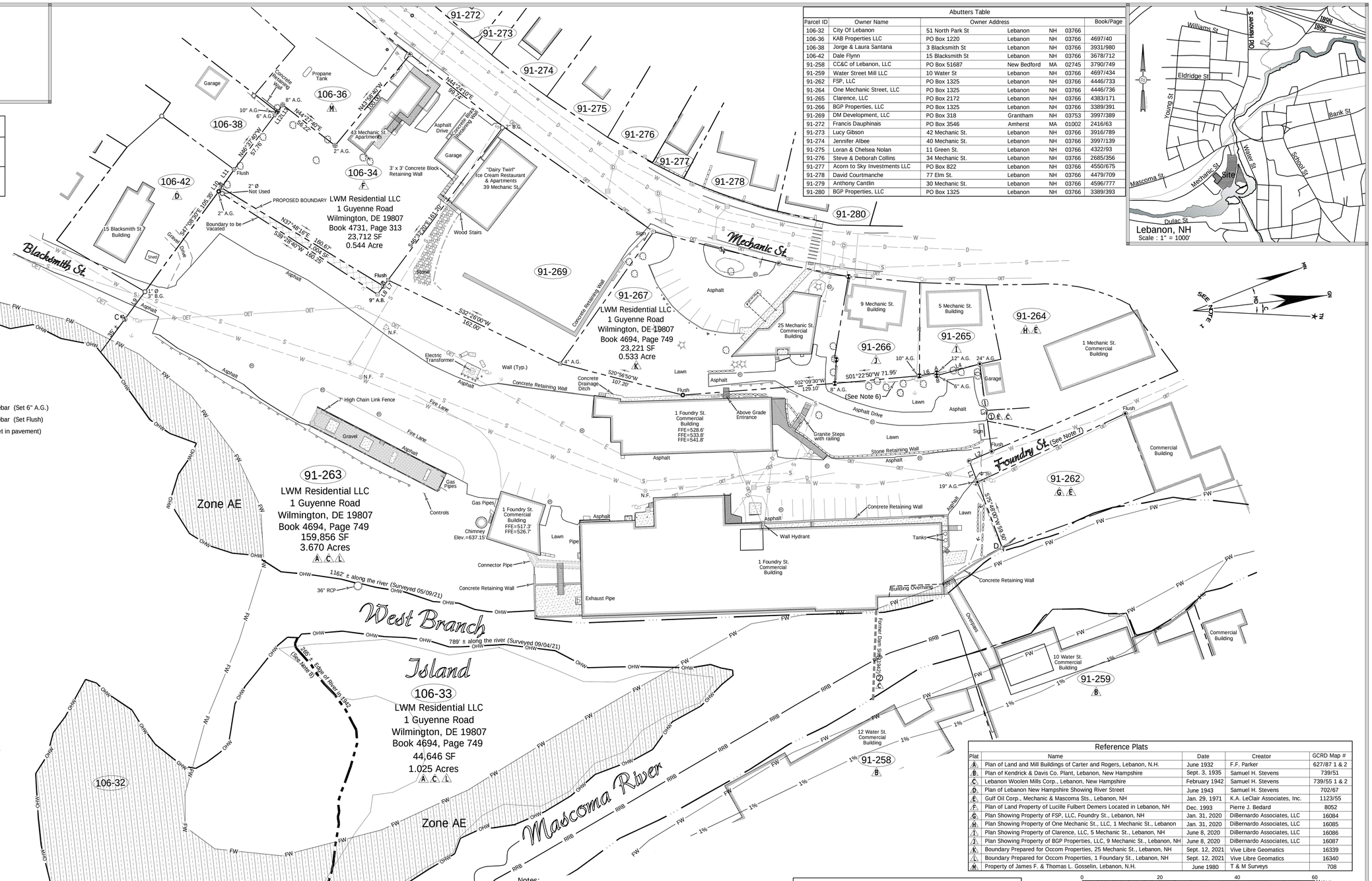
SCALE: AS NOTED

COVER SHEET

C-000

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-000 COVER SHEET.DWG – PLOTTED: 8/12/2024 11:21 AM

	Pre-adjustment Areas	Post adjustment Areas
Parcel 106-34	23,712 SF 0.544 Acres	22,708 SF 0.521 Acres
Parcel 91-263	159,856 SF 3.670 Acres	160,860 SF 3.693 Acres



Line Table		
Line	Length	Bearing
L1	19.05'	S75°48'00"W
L2	20.45'	N16°59'30"W
L3	74.75'	S88°49'00"W
L4	37.65'	S08°37'20"E
A to B	2.30'	N87°01'30"W
L6	14.75'	S03°05'20"E
L7	6.43'	S46°58'50"E
L8	8.62'	S46°58'50"E
L9	28.70'	S47°10'30"E
L10	3.90'	N48°12'30"W
L11	18.85'	N48°12'30"W
L12	3.20'	N45°46'30"W
L13	7.50'	N47°10'00"W
C to D	767.75'	N21°09'30"E

Abutters Table						
Parcel ID	Owner Name	Owner Address				Book/Page
106-32	City Of Lebanon	51 North Park St	Lebanon	NH	03766	
106-36	KAB Properties LLC	PO Box 1220	Lebanon	NH	03766	4697/40
106-38	Jorge & Laura Santana	3 Blacksmith St	Lebanon	NH	03766	3931/980
106-42	Dale Flynn	15 Blacksmith St	Lebanon	NH	03766	3678/712
91-258	CC&C of Lebanon, LLC	PO Box 51687	New Bedford	MA	02745	3790/749
91-259	Water Street Mill LLC	10 Water St	Lebanon	NH	03766	4697/434
91-262	FSP, LLC	PO Box 1325	Lebanon	NH	03766	4446/733
91-264	One Mechanic Street, LLC	PO Box 1325	Lebanon	NH	03766	4446/736
91-265	Clarence, LLC	PO Box 2172	Lebanon	NH	03766	4383/171
91-266	BGP Properties, LLC	PO Box 1325	Lebanon	NH	03766	3389/391
91-269	DM Development, LLC	PO Box 318	Grantham	NH	03753	3997/389
91-272	Francis Dauphinais	PO Box 3546	Amherst	MA	01002	2416/63
91-273	Lucy Gibson	42 Mechanic St.	Lebanon	NH	03766	3916/789
91-274	Jennifer Albee	40 Mechanic St.	Lebanon	NH	03766	3997/139
91-275	Loran & Chelsea Nolan	11 Green St.	Lebanon	NH	03766	4322/93
91-276	Steve & Deborah Collins	34 Mechanic St.	Lebanon	NH	03766	2685/356
91-277	Acorn to Sky Investments LLC	PO Box 822	Lebanon	NH	03766	4550/675
91-278	David Courtmanche	77 Elm St.	Lebanon	NH	03766	4479/709
91-279	Anthony Cantlin	30 Mechanic St.	Lebanon	NH	03766	4596/777
91-280	BGP Properties, LLC	PO Box 1325	Lebanon	NH	03766	3389/393

Reference Plats				
Plat	Name	Date	Creator	GCRD Map #
A	Plan of Land and Mill Buildings of Carter and Rogers, Lebanon, N.H.	June 1932	F.F. Parker	627/87 1 & 2
B	Plan of Kendrick & Davis Co. Plant, Lebanon, New Hampshire	Sept. 3, 1935	Samuel H. Stevens	739/51
C	Lebanon Woolen Mills Corp., Lebanon, New Hampshire	February 1942	Samuel H. Stevens	739/55 1 & 2
D	Plan of Lebanon New Hampshire Showing River Street	June 1943	Samuel H. Stevens	702/67
E	Gulf Oil Corp., Mechanic & Mascoma Sts., Lebanon, NH	Jan. 29, 1971	K.A. LeClair Associates, Inc.	1123/55
F	Plan of Land Property of Lucille Fulbert Demers Located in Lebanon, NH	Dec. 1993	Pierre J. Bedard	8052
G	Plan Showing Property of FSP, LLC, Foundry St., Lebanon, NH	Jan. 31, 2020	DiBernardo Associates, LLC	16084
H	Plan Showing Property of One Mechanic St., LLC, 1 Mechanic St., Lebanon	Jan. 31, 2020	DiBernardo Associates, LLC	16085
I	Plan Showing Property of Clarence, LLC, 5 Mechanic St., Lebanon, NH	June 8, 2020	DiBernardo Associates, LLC	16086
J	Plan Showing Property of BGP Properties, LLC, 9 Mechanic St., Lebanon, NH	June 8, 2020	DiBernardo Associates, LLC	16087
K	Boundary Prepared for Occom Properties, 25 Mechanic St., Lebanon, NH	Sept. 12, 2021	Vive Libre Geomatics	16339
L	Boundary Prepared for Occom Properties, 1 Foundary St., Lebanon, NH	Sept. 12, 2021	Vive Libre Geomatics	16340
M	Property of James F. & Thomas L. Gosselin, Lebanon, N.H.	June 1980	T & M Surveys	708

Meters: 0 20 40 60
Feet: 0 40 80 120 160 200

Notes:

1) Bearings shown on this plat refer to New Hampshire Grid North as established by an OPUS observation with the establishment of grid coordinates on horizontal control points by static observations and/or RTK. Magnetic Declination(MD)=-14°07' Convergence(C) = -0°24'22". Elevations shown on this plan are NAVD88.
2) The physical evidence shown on this plat is based upon a field surveys by Vive Libre Geomatics, dated August-September 2021 and January-August 2022.
3) Boundaries are computed from Leica TCA 1105+ Total Station and Javad Triumph-1 field surveys, positional tolerance = 0.05' + 100 ppm at 95% confidence.
4) Portions of Parcels 91-263 and 103-33 are in Flood Zone AE as shown in the City of Lebanon Flood Insurance Rate Map, Community Number 330061, Panel 0894 E, with an effective date of February 20, 2008.
5) Parcels 91-263 and 106-34 are zoned Lebanon Downtown District (LD).

This plan shows Minor Lot Line Adjustments/Boundary Line Agreements and does not require the approval of the Lebanon Planning Board as a subdivision.

I certify that this survey plat is not a subdivision pursuant to N.H.R.S.A. Title LXIV 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,III
I further certify to the record owners that a field survey was performed that meets the accuracy requirements for a New Hampshire Class U (Urban) survey. This plat is based on deed descriptions, map references listed, and physical evidence found in the field. It is consistent with this information to the best of my knowledge and belief unless otherwise noted.

Ronald D. Taber — September 1, 2022
Ronald D. Taber NH L.S. 943 — Date

STATE OF NEW HAMPSHIRE No. 943 RONALD D. TABER LAND SURVEYOR
SIGNATURE

40 years
Vive Libre Geomatics

Lot Line Adjustment Plan
prepared for
LWM Residential LLC
in
Lebanon, Grafton County, New Hampshire

Owner of Record: LWM Residential LLC		Sheet: 1 of 1
Tax Map #: 91-263 & 106-34		Vive Libre Geomatics P.O. Box 1093 Lebanon, NH 03766 (603) 674-6998
Scale: 1" = 40'	Drawing: 22028-bo	
Date: 9/01/22	Revised:	

STANDARD ABBREVIATIONS

BENCHMARK	BM	END OF VERTICAL CURVE ELEVATION	EVCE	LIMITS OF CONSTRUCTION	LOC	REINFORCED CONCRETE PIPE	RCP
BEGINNING OF VERTICAL CURVE ELEVATION	BVCE	END OF VERTICAL CURVE STATION	EVCS	LIMITS OF DISTURBANCE	LOD	RIGHT-OF-WAY	ROW
BEGINNING OF VERTICAL CURVE STATION	BVCS	EXISTING	EX	MAXIMUM	MAX	SANITARY	SAN
CAST-IN-PLACE	CIP	EXISTING GRADE/GROUND	EG	MINIMUM	MIN	SANITARY MANHOLE	SMH
CAST IRON	CI	FINISHED FLOOR	FF	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	MUTCD	SEPTIC TANK	ST
CATCH BASIN	CB	FINISHED GRADE/GROUND	FG	MONITORING WELL	MW	SILT FENCE	SF
CENTERLINE	℄	FIELD INLET	FI	MONUMENT	MON	SLOPE	S=
CLEAN OUT	C/O	FLARED END SECTION	FES	NOT IN CONTRACT	NIC	STATION	STA
CORRUGATED METAL PIPE	CMP	FOOT, FEET	FT	NOT TO SCALE	NTS	STORM MANHOLE	DMH
CUBIC FEET	CF	FOOTING	FTG	POINT OF CURVATURE	PC	TANGENT	TAN
CUBIC FEET PER SECOND	CFS	FOUNDATION	FND	POINT OF INTERSECTION	PI	TANGENT TO CURVE	TC
CUBIC YARD	CY	GALLONS PER MINUTE	GPM	POLYETHYLENE, PROFESSIONAL ENGINEER	PE	TAPPING SLEEVE AND VALVE	TS&V
DIAMETER	DIA	GATE VALVE	GV	PROPERTY LINE	PL	TEMPORARY BENCHMARK	TBM
DISTRIBUTION BOX	D-BOX	HEADWALL	HW	PERC TEST, POINT OF TANGENCY	PT	TEST PIT	TP
DUCTILE IRON	DI	HIGH DENSITY POLYETHYLENE	HDPE	POLYVINYL CHLORIDE	PVC	TOP OF BANK	TOB
EDGE OF CONCRETE	EOC	HYDRANT	HYD	POINT OF VERTICAL INTERSECTION	PVI	TOP OF CURB	TOC
EDGE OF GRAVEL	EOG	INTERSECTION	INT	POND	PND	TOP OF WALL	TOW
EDGE OF PAVEMENT	EOP	INVERT	INV	QUANTITY	QTY	TYPICAL	TYP
ELECTRIC	ELEC	IRON PIN	IP	QUALITY ASSURANCE	QA	VERIFY IN FIELD	VIF
ELECTRIC MANHOLE	EMH	IRON PIPE SIZE	IPS	QUALITY CONTROL	QC	WATER VALVE	WV
ELEVATION	ELEV	LENGTH	L=	RADIUS	R=		

GENERAL NOTES

1. EXACT OBJECT LOCATIONS MAY DIFFER FROM THAT AS SHOWN, AND ADDITIONAL SUB-SURFACE AND SURFACE UTILITIES AND STRUCTURES MAY EXIST. THE CONTRACTOR IS TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK AND TO CALL DIG SAFE 72 HOURS PRIOR TO ANY DIGGING, DRILLING OR BLASTING.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL FROM THE ENGINEER.
3. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
4. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO EXISTING CONDITIONS OR BETTER AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
6. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, AND CERTIFICATES.
7. THE CONTRACTOR WILL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW HAMPSHIRE STATE LICENSED LAND SURVEYOR.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT EXPLORATORY TEST PITS AS MAY BE REQUIRED TO DETERMINE UNDERGROUND CONDITIONS.
10. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS FOR CONSTRUCTION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
12. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, UNLESS NOTED OTHERWISE.
13. ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND IMPERVIOUS SURFACES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION, MONITORING, MAINTENANCE AND REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES AND TAKING PRECAUTIONARY STEPS TO AVOID ANY SEDIMENT TRANSFER TO NEIGHBORING SITES OR WATERS OF THE STATE.
17. FOLLOWING ANY WARRANTY PERIOD, 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.
18. AFTER THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE STORAGE, DISPLAY, OR PARKING OF MOTOR VEHICLES, BOATS, MOBILE HOMES, TRAILERS, OR CONSTRUCTION EQUIPMENT WITHIN LANDSCAPED AREAS, BUFFERS, OR SCREENS, SHOWN AS SUCH ON THE APPROVED LANDSCAPE PLAN, IS EXPRESSLY PROHIBITED AND A VIOLATION OF THE NOTICE OF ACTION.

SYMBOL LEGEND

PROPOSED FEATURES	EXISTING FEATURES
BOUND	*BOUND*
BENCHMARK	*BENCHMARK*
DRILL HOLE	*DRILL HOLE*
SURVEY POINT	*SURVEY POINT*
IRON PIN	*IRON PIN*
TP1 TEST PIT	*TP1 TEST PIT*
B1 BORING	*B1 BORING*
P1 PERC TEST	*P1 PERC TEST*
CATCH BASIN (SQUARE)	*CATCH BASIN (SQUARE)*
CATCH BASIN (ROUND)	*CATCH BASIN (ROUND)*
HEADWALL	*HEADWALL*
FLARED END SECTION	*FLARED END SECTION*
STONE APRON	*STONE APRON*
DRAIN MANHOLE (DMH)	*DRAIN MANHOLE (DMH)*
C/O DRAINAGE CLEAN OUT	*C/O DRAINAGE CLEAN OUT*
SANITARY SEWER MANHOLE (SMH)	*SANITARY SEWER MANHOLE (SMH)*
C/O SANITARY CLEAN OUT	*C/O SANITARY CLEAN OUT*
HYDRANT	*HYDRANT*
WS WATER SHUTOFF	*WS WATER SHUTOFF*
TAPPING SLEEVE & VALVE	*TAPPING SLEEVE & VALVE*
GV GATE VALVE	*GV GATE VALVE*
WELL	*WELL*
UTILITY POLE	*UTILITY POLE*
GUY POLE	*GUY POLE*
ELECTRICAL MANHOLE	*ELECTRICAL MANHOLE*
BUILDING MOUNTED LIGHT	*FLOOD LIGHT*
LIGHT POST	*LIGHT POST*
TELEPHONE MANHOLE	*TELEPHONE MANHOLE*
NATURAL GAS MANHOLE	*NATURAL GAS MANHOLE*
COMMUNICATION MANHOLE	*COMMUNICATION MANHOLE*
BOLLARD	*BOLLARD*
SINGLE POLE SIGN	*SINGLE POLE SIGN*
DOUBLE POLE SIGN	*DOUBLE POLE SIGN*
+100.5 SPOT ELEVATION	*+ 100.00 SPOT ELEVATION*
ACCESSIBLE PARKING STALL	*ACCESSIBLE PARKING STALL*
DRAINAGE FLOW	*DRAINAGE FLOW*
DECIDUOUS TREE	*DECIDUOUS TREE*
CONIFEROUS TREE	*CONIFEROUS TREE*
ACCESSIBLE CURB RAMP	

LINETYPE LEGEND

PROPOSED FEATURES	EXISTING FEATURES
100 MAJOR CONTOUR	*100 MAJOR CONTOUR*
98 MINOR CONTOUR	*98 MINOR CONTOUR*
EDGE OF RIVER	*EDGE OF RIVER*
EDGE OF POND	*EDGE OF POND*
	FLOOD PLAIN BASED ON B.F.E
	FW *FEMA FLOOD PLAIN LIMITS*
	50' *50' SETBACK FROM ORDINARY HIGH WATER LINE*
	150' *150' SETBACK FROM ORDINARY HIGH WATER LINE*
	250' *250' SETBACK FROM ORDINARY HIGH WATER LINE*
	RRB *RIPARIAN RIGHTS BOUNDARY LINE*
PROPERTY LINE	*PROPERTY LINE*
RIGHT OF WAY	*RIGHT OF WAY*
SETBACK	*SETBACK*
EASEMENT	*EASEMENT*
LOC LIMIT OF CONSTRUCTION	*LIMIT OF CONSTRUCTION*
LOD LIMIT OF DISTURBANCE	*LIMIT OF DISTURBANCE*
SF SILT FENCE	*SILT FENCE*
DEMOLITION WORK	*DEMOLITION WORK*
CENTERLINE	*CENTERLINE*
EDGE OF PAVEMENT	*EDGE OF PAVEMENT*
EDGE OF GRAVEL	*EDGE OF GRAVEL*
EDGE OF CONCRETE	*EDGE OF CONCRETE*
CURB	*CURB*
X FENCE (BARBED WIRE)	*X FENCE (BARBED WIRE)*
FENCE (CHAIN LINK)	*FENCE (CHAIN LINK)*
FENCE (WOODEN)	*FENCE (WOODEN)*
GUARD RAIL	*GUARD RAIL*
TREE LINE	*TREE LINE*
	EDGE OF WETLANDS - DELINEATED
	EDGE OF WETLANDS - APPROXIMATE
STONE WALL	*STONE WALL*
S SANITARY SEWER	*S SANITARY SEWER*
	(S) SANITARY SEWER APPROX.
FM SEWER FORCEMAIN	*FM SEWER FORCEMAIN*
SS SEWER SERVICE	*SS SEWER SERVICE*
SLA DISPOSAL AREA LATERAL	*SLA DISPOSAL AREA LATERAL*
SD STORM LINE	*SD STORM LINE*
	(ST) STORM LINE APPROX.
UD UNDER DRAIN	*UD UNDER DRAIN*
FD FOUNDATION DRAIN	*FD FOUNDATION DRAIN*
RD ROOF DRAIN	*RD ROOF DRAIN*
DITCH/SWALE	*DITCH/SWALE*
T TELECOMM	*T TELECOMM*
	(T) TELECOMM APPROX.
UGT UNDERGROUND TELECOMM	*UGT UNDERGROUND TELECOMM*
OHT OVERHEAD TELECOMM	*OHT OVERHEAD TELECOMM*
E ELECTRIC LINE	*E ELECTRIC LINE*
	(E) ELECTRIC APPROX.
UGE UNDERGROUND ELECTRIC	*UGE UNDERGROUND ELECTRIC*
OHE OVERHEAD ELECTRIC	*OHE OVERHEAD ELECTRIC*
SL ELECTRICAL SITE LIGHTING	*SL ELECTRICAL SITE LIGHTING*
W WATER LINE	*W WATER LINE*
	(W) WATER APPROX.
WS WATER SERVICE	*WS WATER SERVICE*
GAS GAS LINE	*GAS GAS LINE*
	(G) GAS APPROX.
CATV CABLE TV	*CATV CABLE TV*
UGTV UNDERGROUND CABLE TV	*OHTV UNDERGROUND CABLE TV*
UGTV OVERHEAD CABLE TV	*OHTV OVERHEAD CABLE TV*
STM STEAM LINE	*STM STEAM LINE*
LPS LOW PRESSURE STEAM	*LPS LOW PRESSURE STEAM*
HPS HIGH PRESSURE STEAM	*HPS HIGH PRESSURE STEAM*
HW HOT WATER	*HW HOT WATER*
CW CHILLED WATER	*CW CHILLED WATER*

SITE PLAN REVIEW

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LANDSCAPE
OJB Landscape Architects
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857.444.8675 | T

STATE OF NEW HAMPSHIRE
NICHOLAS J. RIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	10.09.23
2	FSPR RE-SUBMISSION	12.06.23
3	REVISED PER SPR COMMENTS	01.25.24
4	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

SCALE: NOT TO SCALE

SITE LEGEND AND NOTES

C-001

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWGS\SHEET FILES\22122 C-001 SITE LEGEND AND NOTES.DWG -- PLOTTED: 8/8/2024 4:05 PM

PROJECT PHASING

ALL BUILDING PERMIT SHALL BE OBTAINED WITHIN TWO (2) YEARS OF CURRENT SITE PLAN APPROVAL OR ELSE APPROVAL SHALL BECOME VOID.

PHASE 1 (MILL BUILDING, SURFACE PARKING, STRUCTURED PARKING, STORMWATER, AND UTILITIES)

- CONSTRUCTION SCHEDULE
  - OCTOBER 15, 2024 TO OCTOBER 15, 2026
  - START AND END DATES ARE ESTIMATES AND MAY VARY
- SECURE BUILDING PERMIT PRIOR TO OCTOBER 1, 2025
- MOBILIZE ON SITE, INSTALL CONSTRUCTION ENTRANCE
- FLAG FOR CLEARING BASE LAYOUT
- INSTALL EROSION CONTROL MEASURES
- CLEAR AND GRUB WOODED AREAS
- DEMOLISH HARDSCAPES AND OFFICE BUILDING
- ROUGH GRADE SITE
- CONSTRUCT FOLLOWING SITE IMPROVEMENTS:
  - MASS GRADING FOR SITE IMPROVEMENTS
  - INFRASTRUCTURE FOR SEWER, WATER, STORM DRAINAGE MAINS FOR ENTIRE SITE
  - WIRE UTILITIES (PHONE/CABLE/ELECTRIC) FEEDS TO THE SITE.
  - RETAINING WALLS.
  - MILL AND BOILER BUILDING RENOVATIONS.
  - PARKING STRUCTURE.
  - SEWER, WATER, AND STORM DRAINAGE SERVICE CONNECTIONS TO MILL AND BOILER BUILDINGS.
  - WIRE UTILITIES (PHONE/CABLE/ELECTRIC) SERVICE CONNECTIONS TO MILL AND BOILER BUILDINGS.
  - SELECT SUB-BASE AND BASE GRAVELS.
  - SIDEWALKS, PATIOS, AND PLAZAS ASSOCIATED WITH MILL AND BOILER BUILDINGS.
  - PEDESTRIAN CONNECTIONS TO AND WITHIN PUBLIC R.O.W.
  - FENCING AND GUARD RAILS.
  - DUMPSTER PAD AND ENCLOSURE
  - BASE AND TOP COAT PAVING
  - SIGNAGE AND PAVEMENT MARKINGS
  - LANDSCAPING AND SITE LIGHTING WITHIN PHASE 1.
- PHASE 1 CONSTRUCTION SHALL ACHIEVE "ACTIVE AND SUBSTANTIAL DEVELOPMENT", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.A, BY APRIL 15, 2026.
- PHASE 1 CONSTRUCTION SHALL ACHIEVE "SUBSTANTIAL COMPLETION", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.B, BY OCTOBER 15, 2026.

PHASE 2 (BUILDING 3 AND ADJACENT SIDEWALKS)

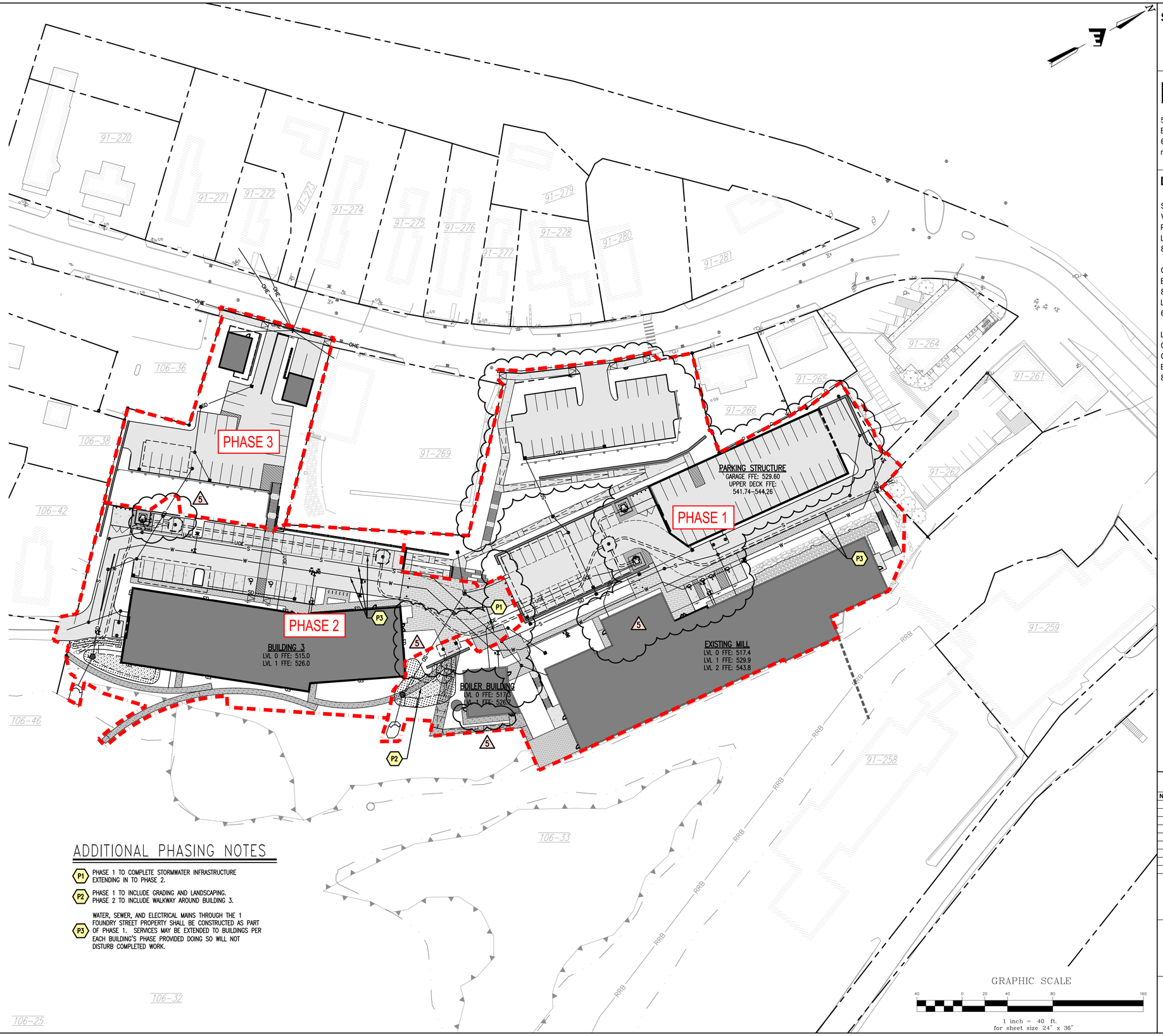
- CONSTRUCTION SCHEDULE
  - APRIL 15, 2025 TO APRIL 30, 2027
  - START AND END DATES ARE ESTIMATES AND MAY VARY
- SECURE BUILDING PERMIT PRIOR TO APRIL 1, 2026
- CONSTRUCT FOLLOWING SITE IMPROVEMENTS
  - BUILDING 3.
  - SEWER, WATER, AND STORM DRAINAGE SERVICE CONNECTIONS.
  - WIRE UTILITIES (PHONE/CABLE/ELECTRIC) SERVICE CONNECTIONS.
  - STORMWATER INFRASTRUCTURE.
  - SELECT SUB-BASE AND BASE GRAVELS.
  - SIDEWALKS.
  - DUMPSTER PAD AND ENCLOSURE.
  - BASE AND TOP COAT PAVING.
  - SIGNAGE AND PAVEMENT MARKINGS.
  - LANDSCAPING AND SITE LIGHTING.
- PHASE 2 CONSTRUCTION SHALL ACHIEVE "ACTIVE AND SUBSTANTIAL DEVELOPMENT", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.A, BY OCTOBER 31, 2026.
- PHASE 2 CONSTRUCTION SHALL ACHIEVE "SUBSTANTIAL COMPLETION", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.B, BY APRIL 30, 2027.

PHASE 3 (43 MECHANIC STREET)

- CONSTRUCTION SCHEDULE
  - APRIL 15, 2025 TO APRIL 30, 2027
  - START AND END DATES ARE ESTIMATES AND MAY VARY
  - SOME ITEMS MAY BE COMPLETED AS PARTS OF EARLIER PHASES
- SECURE BUILDING PERMIT PRIOR TO APRIL 1, 2026
- CONSTRUCT FOLLOWING SITE IMPROVEMENTS
  - SELECT DEMOLITION OF PORTIONS OF 43 MECHANIC STREET.
  - STORMWATER INFRASTRUCTURE.
  - SELECT SUB-BASE AND BASE GRAVELS
  - LANDSCAPING AND SITE LIGHTING.
  - BASE AND TOP COAT PAVING.
  - SIGNAGE AND PAVEMENT MARKINGS.
- PHASE 3 CONSTRUCTION SHALL ACHIEVE "ACTIVE AND SUBSTANTIAL DEVELOPMENT", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.A, BY OCTOBER 31, 2026.
- PHASE 3 CONSTRUCTION SHALL ACHIEVE "SUBSTANTIAL COMPLETION", AS DEFINED BY LEBANON'S SITE PLAN REVIEW REGULATIONS SECTION 8.4.B, BY APRIL 30, 2027.

PHASING NOTES

1. ALL SITE IMPROVEMENTS WITHIN A PHASE SHALL BE COMPLETE PRIOR TO THE ISSUANCE OF A TEMPORARY CERTIFICATE OF OCCUPANCY FOR THE BUILDING WITHIN THAT PHASE, EXCEPT AS MAY OTHERWISE BE PERMITTED PURSUANT TO SECTION 8.3.A OF THE LEBANON SITE PLAN REVIEW REGULATIONS.
   a. THE STORMWATER DETENTION CHAMBERS AND RAIN GARDENS SHOULD NOT BE PUT INTO SERVICE UNTIL THE ENTIRE SITE IS STABILIZED AS DEFINED BY NHDES AND SUMMARIZED ON SHEET C-410. IF SYSTEMS ARE USED PRIOR TO SITE STABILIZATION THEY SHALL BE BROUGHT TO LIKE-NEW CONDITION PRIOR TO BEING TURNED OVER TO THE OWNER.
2. SECURITY SHALL BE PROVIDED IN A FORM AND IN AN AMOUNT ACCEPTABLE TO THE CITY OF LEBANON PRIOR TO THE ISSUANCE OF A TEMPORARY CERTIFICATE OF OCCUPANCY FOR BUILDING 2. THE SECURITY PROVIDED SHALL SECURE ALL REMAINING SITE IMPROVEMENTS THAT WILL NEED TO BE COMPLETED WITH THE DEVELOPMENT IN THE EVENT THAT THE REMAINING PHASES AREN'T CONSTRUCTED. THE AMOUNT OF THE SECURITY SHALL BE REDUCED UPON ISSUANCE OF A TEMPORARY CERTIFICATE OF OCCUPANCY FOR EACH SUBSEQUENT BUILDING AND ACCOUNT FOR THE CONSTRUCTION OF SITE IMPROVEMENTS MADE IN ASSOCIATION WITH THAT BUILDING. THE DEVELOPMENT SITE IMPROVEMENTS TO BE SECURED PRIOR TO ISSUANCE OF A TEMPORARY CO SHALL MUTUALLY AGREED UPON BETWEEN OWNER AND CITY PLANNING DEPARTMENT STAFF.



ADDITIONAL PHASING NOTES

P1 — PHASE 1 TO COMPLETE STORMWATER INFRASTRUCTURE EXTENDING IN TO PHASE 2.

P2 — PHASE 1 TO INCLUDE GRADING AND LANDSCAPING. PHASE 2 TO INCLUDE WALKWAY AROUND BUILDING 3.

P3 — WATER, SEWER, AND ELECTRICAL MAINS THROUGH THE 1 FOUNDRY STREET PROPERTY SHALL BE CONSTRUCTED AS PART OF PHASE 1. SERVICES MAY BE EXTENDED TO BUILDINGS PER EACH BUILDING'S PHASE PROVIDED DOING SO WILL NOT DISTURB COMPLETED WORK.

SITE PLAN REVIEW

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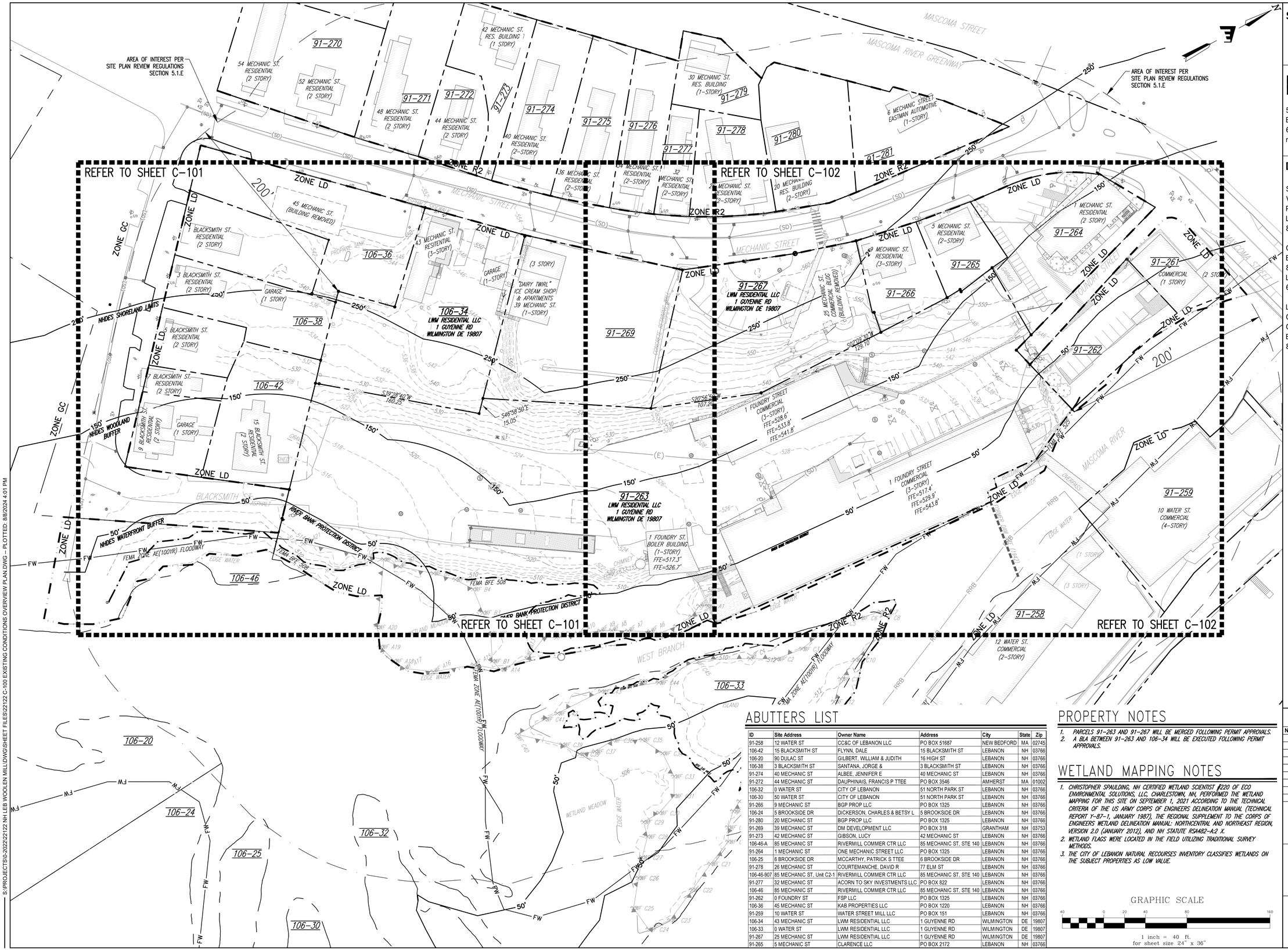
DATE: 08.15.22

SCALE: 1"= 40'

PHASING PLAN

C-003

S:\PROJECTS\02-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-003 PHASING PLAN.DWG -- PLOTTED: 8/12/2024 9:03 AM



ABUTTERS LIST

ID	Site Address	Owner Name	Address	City	State	Zip
91-258	12 WATER ST	CC&C OF LEBANON LLC	PO BOX 51687	NEW BEDFORD	MA	02745
106-42	15 BLACKSMITH ST	FLYNN, DALE	15 BLACKSMITH ST	LEBANON	NH	03766
106-20	90 DULAC ST	GILBERT, WILLIAM & JUDITH	16 HIGH ST	LEBANON	NH	03766
106-38	3 BLACKSMITH ST	SANTANA, JORGE &	3 BLACKSMITH ST	LEBANON	NH	03766
91-274	40 MECHANIC ST	ALBEE, JENNIFER E	40 MECHANIC ST	LEBANON	NH	03766
91-272	44 MECHANIC ST	DAUPHINAIS, FRANCIS P TTEE	PO BOX 3546	AMHERST	MA	01002
106-32	0 WATER ST	CITY OF LEBANON	51 NORTH PARK ST	LEBANON	NH	03766
106-30	50 WATER ST	CITY OF LEBANON	51 NORTH PARK ST	LEBANON	NH	03766
91-265	9 MECHANIC ST	BGP PROP LLC	PO BOX 1325	LEBANON	NH	03766
106-24	5 BROOKSIDE DR	DICKERSON, CHARLES & BETSY L	5 BROOKSIDE DR	LEBANON	NH	03766
91-280	20 MECHANIC ST	BGP PROP LLC	PO BOX 1325	LEBANON	NH	03766
91-269	39 MECHANIC ST	DM DEVELOPMENT LLC	PO BOX 318	GRANTHAM	NH	03753
91-273	42 MECHANIC ST	GIBSON, LUCY	42 MECHANIC ST	LEBANON	NH	03766
106-46-A	85 MECHANIC ST	RIVERMILL COMMER CTR LLC	85 MECHANIC ST, STE 140	LEBANON	NH	03766
91-264	1 MECHANIC ST	ONE MECHANIC STREET LLC	PO BOX 1325	LEBANON	NH	03766
106-25	6 BROOKSIDE DR	MCCARTHY, PATRICK S TTEE	6 BROOKSIDE DR	LEBANON	NH	03766
91-278	26 MECHANIC ST	COURTEMANCHE, DAVID R	77 ELM ST	LEBANON	NH	03766
106-46-907	85 MECHANIC ST, Unit C2-1	RIVERMILL COMMER CTR LLC	85 MECHANIC ST, STE 140	LEBANON	NH	03766
91-277	32 MECHANIC ST	ACORN TO SKY INVESTMENTS LLC	PO BOX 822	LEBANON	NH	03766
106-46	85 MECHANIC ST	RIVERMILL COMMER CTR LLC	85 MECHANIC ST, STE 140	LEBANON	NH	03766
91-262	0 FOUNDRY ST	FSP LLC	PO BOX 1325	LEBANON	NH	03766
106-36	45 MECHANIC ST	KAB PROPERTIES LLC	PO BOX 1220	LEBANON	NH	03766
91-259	10 WATER ST	WATER STREET MILL LLC	PO BOX 151	LEBANON	NH	03766
106-34	43 MECHANIC ST	LWM RESIDENTIAL LLC	1 GUYENNE RD	WILMINGTON	DE	19807
106-33	0 WATER ST	LWM RESIDENTIAL LLC	1 GUYENNE RD	WILMINGTON	DE	19807
91-267	25 MECHANIC ST	LWM RESIDENTIAL LLC	1 GUYENNE RD	WILMINGTON	DE	19807
91-265	5 MECHANIC ST	CLARENCE LLC	PO BOX 2172	LEBANON	NH	03766

PROPERTY NOTES

1. PARCELS 91-263 AND 91-267 WILL BE MERGED FOLLOWING PERMIT APPROVALS.
2. A BLA BETWEEN 91-263 AND 106-34 WILL BE EXECUTED FOLLOWING PERMIT APPROVALS.

WETLAND MAPPING NOTES

1. CHRISTOPHER SPAULDING, NH CERTIFIED WETLAND SCIENTIST #220 OF ECO ENVIRONMENTAL SOLUTIONS, LLC, CHARLESTOWN, NH, PERFORMED THE WETLAND MAPPING FOR THIS SITE ON SEPTEMBER 1, 2021 ACCORDING TO THE TECHNICAL CRITERIA OF THE US ARMY CORPS OF ENGINEERS DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987), THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012), AND NH STATUTE RSA482-A:2 X.
2. WETLAND FLAGS WERE LOCATED IN THE FIELD UTILIZING TRADITIONAL SURVEY METHODS.
3. THE CITY OF LEBANON NATURAL RECOURSES INVENTORY CLASSIFIES WETLANDS ON THE SUBJECT PROPERTIES AS LOW VALUE.

GRAPHIC SCALE

40 0 20 40 80 160

1 inch = 40 ft.
for sheet size 24" x 36"

SITE PLAN REVIEW

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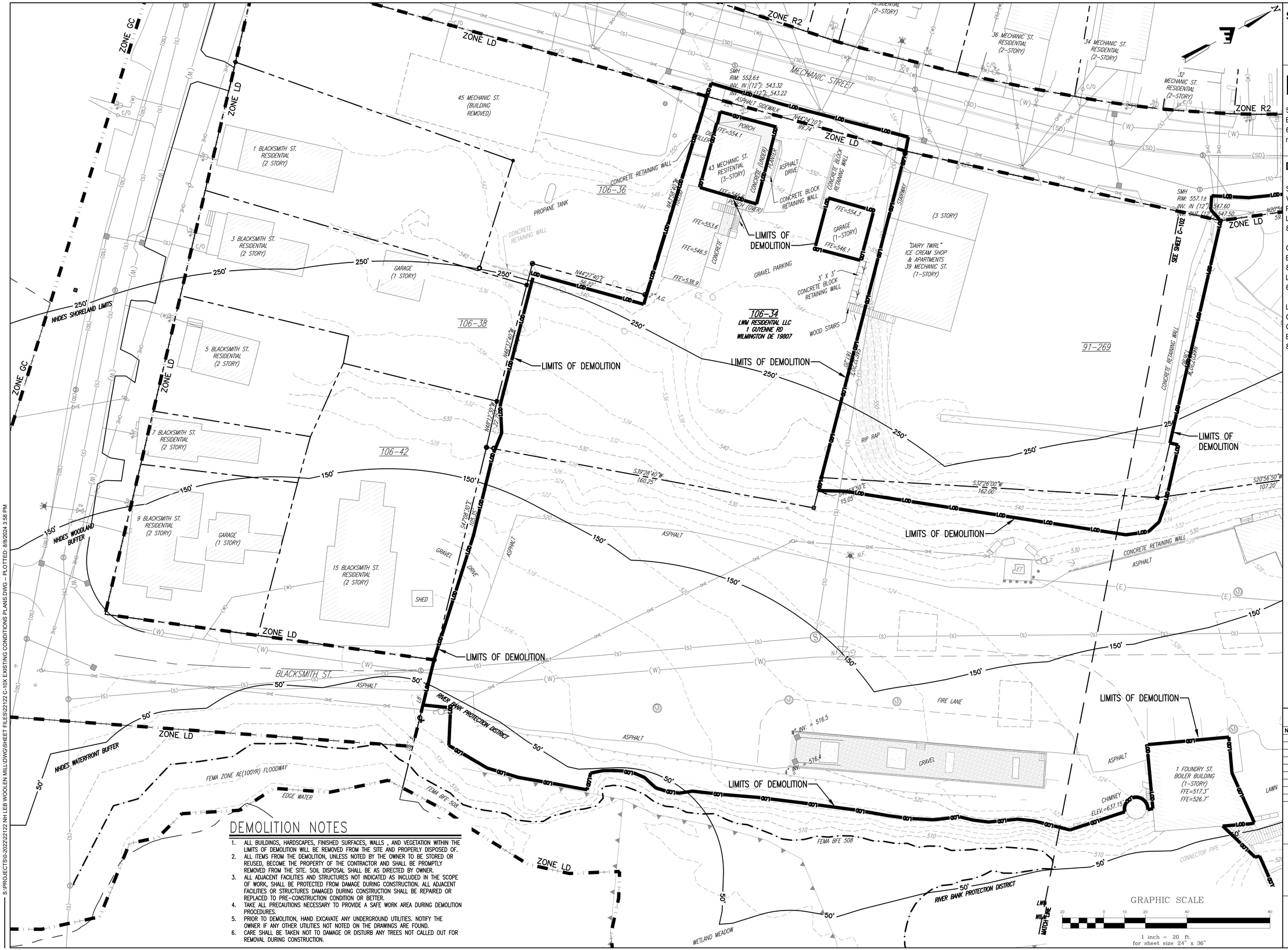
EXISTING CONDITIONS OVERVIEW PLAN

C-100

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-100 EXISTING CONDITIONS OVERVIEW PLAN.DWG – PLOTTED: 8/8/2024 4:01 PM



DEMOLITION NOTES

1. ALL BUILDINGS, HARDSCAPES, FINISHED SURFACES, WALLS , AND VEGETATION WITHIN THE LIMITS OF DEMOLITION WILL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. ALL ITEMS FROM THE DEMOLITION, UNLESS NOTED BY THE OWNER TO BE STORED OR REUSED, BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE. SOIL DISPOSAL SHALL BE AS DIRECTED BY OWNER.
3. ALL ADJACENT FACILITIES AND STRUCTURES NOT INDICATED AS INCLUDED IN THE SCOPE OF WORK, SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. ALL ADJACENT FACILITIES OR STRUCTURES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO PRE-CONSTRUCTION CONDITION OR BETTER.
4. TAKE ALL PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK AREA DURING DEMOLITION PROCEDURES.
5. PRIOR TO DEMOLITION, HAND EXCAVATE ANY UNDERGROUND UTILITIES. NOTIFY THE OWNER IF ANY OTHER UTILITIES NOT NOTED ON THE DRAWINGS ARE FOUND.
6. CARE SHALL BE TAKEN NOT TO DAMAGE OR DISTURB ANY TREES NOT CALLED OUT FOR REMOVAL DURING CONSTRUCTION.

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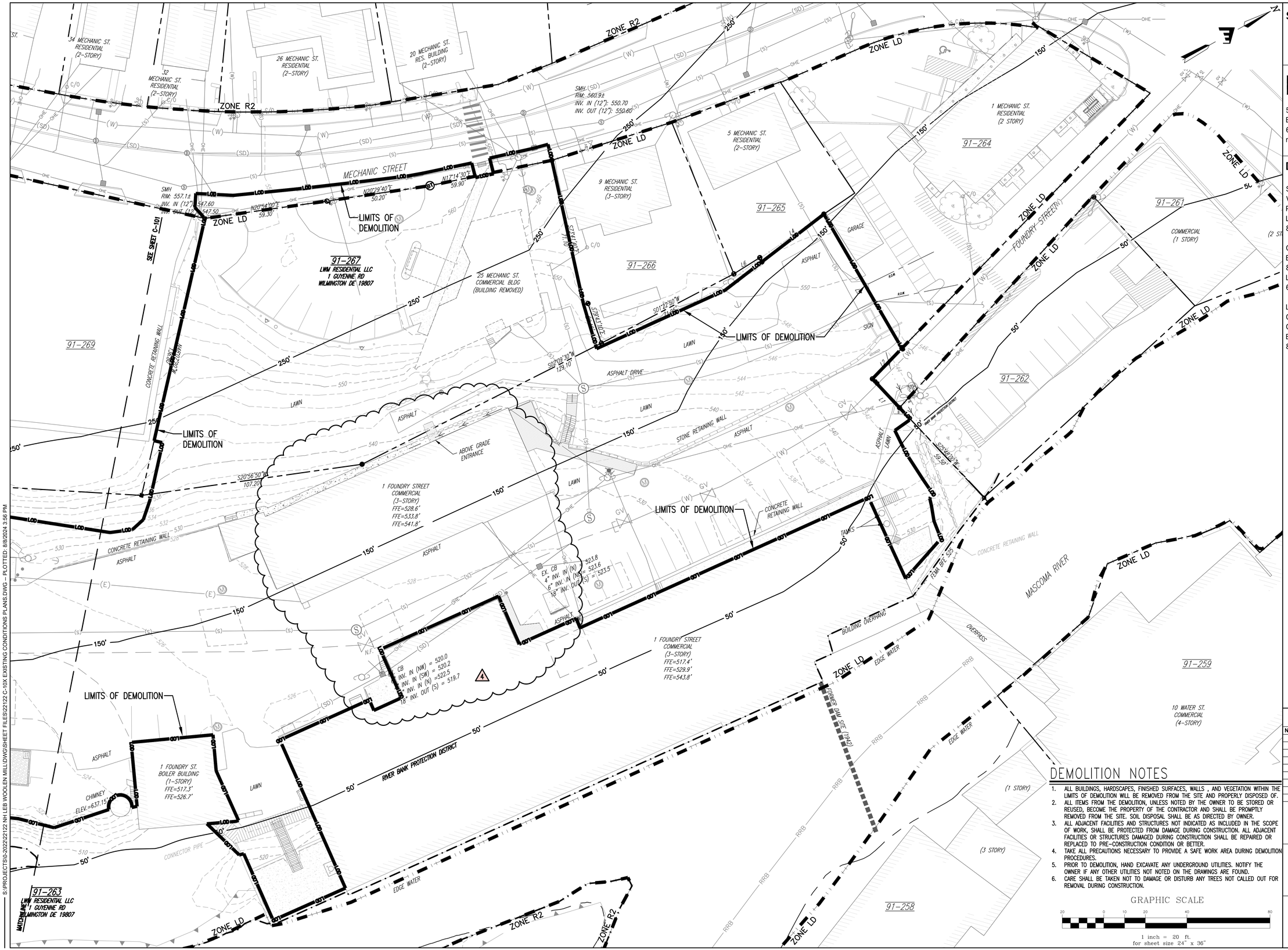
SCALE: 1"= 20'

EXISTING CONDITIONS PLAN (1 OF 2)

C-101

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-10X EXISTING CONDITIONS PLANS.DWG – PLOTTED: 8/8/2024 3:58 PM



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EXISTING CONDITIONS PLAN (2 OF 2)

C-102

DEMOLITION NOTES

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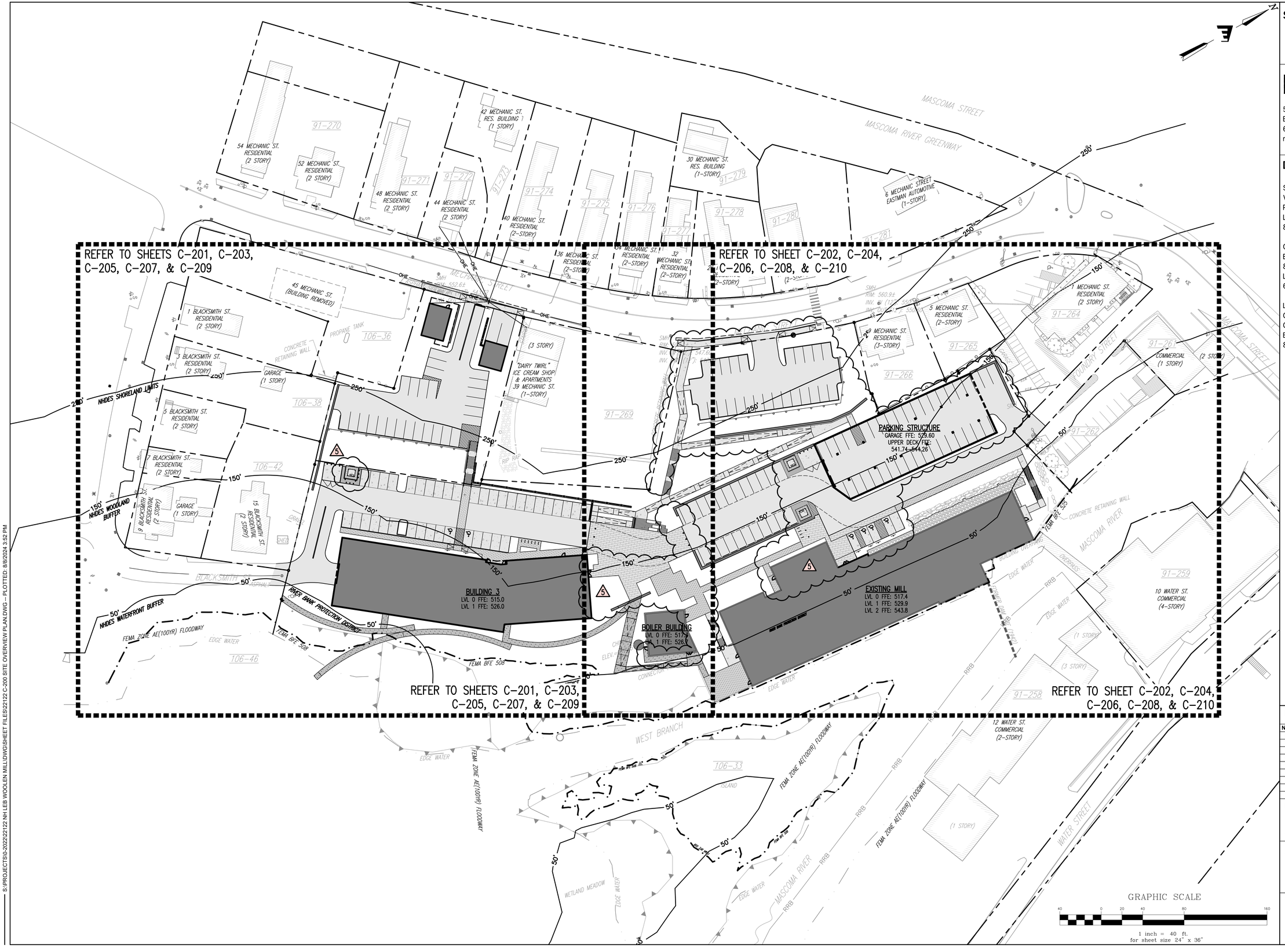
GRAPHIC SCALE

20 0 10 20 40 80

1 inch = 20 ft.
for sheet size 24" x 36"

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-10X EXISTING CONDITIONS PLANS.DWG – PLOTTED: 8/8/2024 3:56 PM



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SCALE: 1"= 40'

SITE OVERVIEW PLAN

C-200

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-200 SITE OVERVIEW PLAN.DWG -- PLOTTED: 8/8/2024 3:52 PM

SITE SCHEDULE

- C1 CONCRETE PAVING – TYPE 1, (PEDESTRIAN RATED), SEE LANDSCAPE PLANS AND DETAILS
- C2 CONCRETE PAVING – TYPE 2, (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C3 STAIRS – TYPE 1, CAST–IN–PLACE CONCRETE STAIRS, SEE LANDSCAPE PLANS AND DETAILS
- C4 ASPHALT PAVING
- C5 UNIT PAVER – TYPE 2, CLAY, PERMEABLE, BRICK PAVERS (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C6 UNIT PAVER – TYPE 3, CLAY BRICK PAVER (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C7 ADA ACCESSIBLE ROUTE CONSISTING OF CAST–IN–PLACE CONCRETE RAMPS AND LANDINGS WITH HANDRAILS
- C8 CONCRETE DUMPSTER PAD WITH FENCES/SCREENED ENCLOSURE
- C9 UNIT PAVER – TYPE 1B, CLAY BRICK PAVER (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C10 UNIT PAVER – TYPE 1A, CLAY BRICK PAVER (PEDESTRIAN RATED), SEE LANDSCAPE PLANS AND DETAILS
- C11 BIKE RACK
- C12 ELEVATED BOARDWALK AND ADA RAMP, WOOD DECKING – TYPE 1, SEE LANDSCAPE PLANS AND DETAILS
- C13 SITE WALL – TYPE 1, CAST–IN–PLACE CONCRETE RETAINING WALL BUILDING PERMITS FOR WALLS SHALL BE OBTAINED PRIOR TO START OF WALL CONSTRUCTION.
- C14 GRANITE CURB
- C15 GRANITE CURB, FLUSH
- C16 CONCRETE FILLED, STEEL PIPE BOLLARD, TYP.
- C17 DECORATIVE GRAVEL – TYPE 1, STABILIZED PEA STONE, SEE LANDSCAPE PLANS AND DETAILS
- C18 STAIRS – TYPE 2, METAL GRATING STAIRS AND LANDING, SEE LANDSCAPE PLANS AND DETAILS
- C19 COLLAPSIBLE OR REMOVABLE BOLLARD
- C20 ACCESSIBLE CURB RAMP, TYP.
- C21 PERMANENT ASPHALT TRENCH PATCH, TYP.
- C22 GRANITE CURB, EVALUATE AND RE–USE EXISTING GRANITE CURBING TO GREATEST EXTENT POSSIBLE
- C23 STACKED STONE WALL, REFER TO LANDSCAPE PLANS AND DETAILS
- C24 EXISTING GRAVEL DRIVE TO BE DISCONTINUED
- C25 CHAINLINK FENCE TO REPLACES EXISTING FENCING ALONG PROPERTY LINE
- C26 HANDI–HUT, BARREL ROOF, PASSENGER SHELTER
- C27 SWING GATES FOR EMERGENCY VEHICLE ACCESS ONLY
- C28 STEEL BEAM GUIDE RAIL

NOTE:

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2. CONSTRUCTION EASEMENTS/AGREEMENTS FOR WORK/IMPACTS ON ABUTTING PROPERTIES SHALL BE SECURED PRIOR COMMENCEMENT OF WORK IN AFFECTED AREAS.
3. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM WITH NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS PUBLISHED AND AMENDED BY THE NHDOT.

S:\PROJECTS\0-202\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X SITE LAYOUT PLANS.DWG – PLOTTED: 8/8/2024 3:50 PM

SITE PLAN REVIEW

RODE
535 Albany Street | 405
Boston, MA 02118
617.422.0090 | T
rodearchitects.com

Design Team

SURVEY
Vive Libre Geomatics
P.O. Box 1093
Lebanon, NH 03766
802.674.6998 | T

CIVIL
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85 Mechanic St Suite E2-3
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603.442.9333 | T

LANDSCAPE
OJB Landscape Architects
One Bowdoin Square, Suite 801
Boston, MA 02114
857.444.8675 | T

STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	PLANNING COMMENTS	10.17.22
2	FSPR AMENDMENT SUBMISSION	10.09.23
3	FSPR REVISED HYBRID LAYOUT	11.07.23
4	FSPR RE–SUBMISSION	12.06.23
5	REVISED PER SPR COMMENTS	01.25.24
6	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

SCALE: 1"= 20'

SITE LAYOUT PLAN (1 OF 2)

C-201

SITE SCHEDULE

- C1 CONCRETE PAVING – TYPE 1, (PEDESTRIAN RATED), SEE LANDSCAPE PLANS AND DETAILS
- C2 CONCRETE PAVING – TYPE 2, (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C3 STAIRS – TYPE 1, CAST-IN-PLACE CONCRETE STAIRS, SEE LANDSCAPE PLANS AND DETAILS
- C4 ASPHALT PAVING
- C5 UNIT PAVER – TYPE 2, CLAY, PERMEABLE, BRICK PAVERS (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C6 UNIT PAVER – TYPE 3, CLAY BRICK PAVER (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C7 ADA ACCESSIBLE ROUTE CONSISTING OF CAST-IN-PLACE CONCRETE RAMPS AND LANDINGS WITH HANDRAILS
- C8 CONCRETE DUMPSTER PAD WITH FENCES/SCREENED ENCLOSURE
- C9 UNIT PAVER – TYPE 1B, CLAY BRICK PAVER (VEHICLE RATED), SEE LANDSCAPE PLANS AND DETAILS
- C10 UNIT PAVER – TYPE 1A, CLAY BRICK PAVER (PEDESTRIAN RATED), SEE LANDSCAPE PLANS AND DETAILS
- C11 BIKE RACK
- C12 ELEVATED BOARDWALK AND ADA RAMP, WOOD DECKING – TYPE 1, SEE LANDSCAPE PLANS AND DETAILS
- C13 SITE WALL – TYPE 1, CAST-IN-PLACE CONCRETE RETAINING WALL BUILDING PERMITS FOR WALLS SHALL BE OBTAINED PRIOR TO START OF WALL CONSTRUCTION.
- C14 GRANITE CURB
- C15 GRANITE CURB, FLUSH
- C16 CONCRETE FILLED, STEEL PIPE BOLLARD, TYP.
- C17 DECORATIVE GRAVEL – TYPE 1, STABILIZED PEA STONE, SEE LANDSCAPE PLANS AND DETAILS
- C18 STAIRS – TYPE 2, METAL GRATING STAIRS AND LANDING, SEE LANDSCAPE PLANS AND DETAILS
- C19 COLLAPSIBLE OR REMOVABLE BOLLARD
- C20 ACCESSIBLE CURB RAMP, TYP.
- C21 PERMANENT ASPHALT TRENCH PATCH, TYP.
- C22 GRANITE CURB, EVALUATE AND RE-USE EXISTING GRANITE CURBING TO GREATEST EXTENT POSSIBLE
- C23 STACKED STONE WALL, REFER TO LANDSCAPE PLANS AND DETAILS
- C24 EXISTING GRAVEL DRIVE TO BE DISCONTINUED
- C25 CHAINLINK FENCE TO REPLACES EXISTING FENCING ALONG PROPERTY LINE
- C26 HANDI-HUT, BARREL ROOF, PASSENGER SHELTER
- C27 SWING GATES FOR EMERGENCY VEHICLE ACCESS ONLY
- C28 STEEL BEAM GUIDE RAIL

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GRAPHIC SCALE

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for sheet size 24" x 36"

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SCALE: 1"= 20'

SITE LAYOUT PLAN (2 OF 2)

C-202

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X SITE LAYOUT PLANS.DWG – PLOTTED: 8/8/2024 3:48 PM

STORMWATER SCHEDULE

CATCHBASINS

- **CB03** — 4' I.D. CONCRETE CB; RIM: 529.23; INV. IN: 524.25 (8" PVC Pipe); INV. OUT: 524.00 (12" HDPE); SUMP: 522.00
- 4 **CB04** — 4' I.D. CONCRETE CB; RIM: 528.99; INV. IN: 523.49 (12" HDPE); INV. OUT: 523.24 (12" HDPE); SUMP: 521.24
- **CB05** — 4' I.D. CONCRETE CB; RIM: 526.50; INV. OUT: 523.15 (12" HDPE); SUMP: 521.15
- **CB06** — 4' I.D. CONCRETE CB; RIM: 525.17; INV. OUT: 516.00 (12" HDPE); SUMP: 514.00
- **CB07** — 4' I.D. CONCRETE CB; RIM: 520.56; INV. OUT: 514.80 (12" HDPE); SUMP: 512.80
- **CB08** — 4' I.D. CONCRETE CB; RIM: 543.28; INV. IN: 538.45 (12" HDPE); INV. OUT: 538.20 (12" HDPE); SUMP: 536.20
- **CB09** — 4' I.D. CONCRETE CB; RIM: 541.34; INV. OUT: 536.34 (12" HDPE); SUMP: 534.34
- **CB10** — 4' I.D. CONCRETE CB; RIM: 539.22; INV. OUT: 532.10 (12" HDPE); SUMP: 530.10
- **CB11** — 4' I.D. CONCRETE CB; RIM: 544.00; INV. OUT: 539.50 (12" HDPE); SUMP: 537.50
- **CB13** — 4' I.D. CONRCRETE CB; RIM: 534.00; INV. IN: 522.35 (18" HDPE); SUMP: 520.16
- **CB14** — 4' I.D. CONCRETE CB; RIM: 545.80; INV. OUT: 540.78 (12" HDPE); SUMP: 538.78
- **CB15** — 4' I.D. CONCRETE CB; RIM: 528.90; INV. IN: 522.09 (12" HDPE); INV. IN: 522.82 (12" HDPE); INV. OUT: 521.84 (12" HDPE); SUMP: 521.84
- 4 **CB16** — 2' SQ., CONCRETE, DROP INLET; RIM: 528.48; INV. IN: 521.78 (12" HDPE); INV. OUT: 521.53 (12" HDPE); SUMP: 521.53
- **CB17** — 2' SQ., CONCRETE, DROP INLET; RIM: 526.98; INV. IN: 522.98 (12" HDPE); INV. OUT: 522.73 (12" HDPE); SUMP: 522.73
- **CB18** — 2' SQ., CONCRETE, DROP INLET; RIM: 527.23; INV. OUT: 523.23 (12" HDPE); SUMP: 523.23
- **CB19** — 4' I.D. CONCRETE CB; RIM: 557.79; INV. OUT: 553.75 (12" HDPE); SUMP: 551.75
- **CB20** — 4' I.D. CONCRETE CB; RIM: 556.64; INV. IN: 552.60 (12" HDPE); INV. OUT: 546.60 (12" HDPE); SUMP: 546.60

4 **BUILDING ENTRANCE**

- **D01** — UPPER DECK DRAIN ENTRANCE; INV. 12" HDPE: 523.31

RAIN GARDENS

- **FB01** — 3,500 GAL. STORMWATER FOREBAY TANK; RIM ELEV:525.80; 12" DIA. INV. IN: 521.72; 12" DIA. INV. OUT: 521.47; TOP OF TANK: 524.47; BOTTOM OF TANK: 516.47
- **RG01** — RAIN GARDEN; TOP OF BERM ELEV.: 520.00; BOTTOM ELEV.: 516.00
- **RG02** — RAIN GARDEN; TOP OF BERM ELEV.: 515.00; BOTTOM ELEV.: 510.00

DRAINAGE MANHOLES

- **DM01** — 4' I.D. CONCRETE MH; RIM: 526.99; INV. IN: 522.82 (12" HDPE); INV. OUT: 522.72 (12" HDPE)
- **DM02** — 4' I.D. CONCRETE MH; RIM: 541.87; INV. IN: 536.50 (12" HDPE); INV. IN: 535.78 (12" HDPE); INV. OUT: 531.89 (12" HDPE)
- **DM03** — 4' I.D. CONCRETE MH; RIM: 522.28; INV. IN: 517.50 (12" HDPE); INV. OUT: 517.27 (12" HDPE)
- **DM04** — 4' I.D. CONCRETE MH; RIM: 518.94; INV. IN: 513.50 (12" HDPE); INV. OUT: 513.40 (12" HDPE)
- **DM05** — 4' I.D. CONCRETE MH; RIM: 542.64; INV. IN: 538.64 (12" HDPE); INV. OUT: 537.00 (12" HDPE)
- 4 **DM07** — 4' I.D. CONRCRETE CB; RIM: 528.89; INV. IN: 520.72 (12" HDPE); INV. IN: 520.47 (18" HDPE); INV. OUT: 524.79 (12" HDPE)
- **DM08** — 4' I.D. CONRCRETE CB; RIM: 538.44; INV. IN: 521.68 (12" HDPE); INV. IN: 534.44 (12" HDPE)

STORMWATER CHAMBER SYSTEMS

- **SC01** — CULTEC STORAGE CHAMBER SYSTEM; 48 R-902-HD CHAMBERS IN 3 ROWS OF 16 EACH; INV. IN & OUT: 514.75; TOP OF STONE: 519.75; TOP OF CHAMBER: 518.75; BOTTOM OF CHAMBER 514.75; BOTTOM OF STONE ELEV.: 514.0
- **SC02** — CULTEC STORAGE CHAMBER SYSTEM; 30 R-902-HD CHAMBERS IN 3 ROWS OF 10 EACH; INV. IN & OUT: 531.85; TOP OF STONE: 536.85; TOP OF CHAMBER: 535.85; BOTTOM OF CHAMBER 531.85; BOTTOM OF STONE ELEV.: 531.1
- **SC03** — CULTEC STORAGE CHAMBER SYSTEM WITH UNDERGROUND SAND FILTER; 80 R-902-HD CHAMBERS IN 5 ROWS OF 16 EACH; INV. IN & OUT: 520.47; TOP OF STONE: 525.47; TOP OF CHAMBER: 524.47; BOTTOM OF CHAMBER 520.47; BOTTOM OF STONE ELEV.: 519.72; TOP OF FILTER COURSE: 519.72; BOTTOM OF FILTER COURSE: 518.22 (4)

OUTLET STRUCTURES

- **OS1** — OUTLET STRUCTURE; RIM: 527.37; INV. IN: 520.11 (18" HDPE); INV. IN: 516.50 (6" PVC); INV. OUT: 523.00 (18" HDPE); INV. OUT: 516.00 (18" HDPE); SUMP: 516.00
- **OS2** — OUTLET STRUCTURE; RIM: 512.10; INV. IN: 508.00 (12" HDPE); INV. OUT: 507.50 (12" HDPE); SUMP: 506.00
- **OS3** — OUTLET STRUCTURE; RIM: 518.00; INV. IN: 514.00 (18" HDPE); INV. OUT: 513.20 (18" HDPE); SUMP: 511.70
- **OS4** — OUTLET STRUCTURE; RIM: 520.87; INV. IN: 513.80 (12" HDPE); INV. IN: 513.80 (24" HDPE); INV. OUT: 513.70 (12" HDPE); SUMP: 513.70
- **OS5** — OUTLET STRUCTURE; RIM: 541.27; INV. IN: 531.77 (24" HDPE); INV. OUT: 528.00 (12" HDPE); SUMP: 528.00

HEADWALLS

- **HW01** — CONCRETE HEADWALL; TOP OF WALL ELEV.: 524.00; INV. OUT ELEV.: 521.5
- **HW02** — CONCRETE HEADWALL; TOP OF WALL ELEV.: 512.4; INV. OUT ELEV.: 509.9
- **HW03** — CONCRETE HEADWALL; TOP OF WALL ELEV.: 511.00; INV. OUT ELEV.: 507.00
- **HW04** — CONCRETE HEADWALL; TOP OF WALL ELEV.: 538.00; INV. OUT ELEV.: 536.00

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SCALE: 1"= 20'

GRADING AND DRAINAGE PLAN (1 OF 2)

C-203

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X GRADING AND DRAINAGE PLANS.DWG -- PLOTTED: 8/8/2024 3:33 PM

STORMWATER SCHEDULE

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- **CB10** — 4' I.D. CONCRETE CB; RIM: 539.22; INV. OUT: 532.10 (12" HDPE); SUMP: 530.10
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DATE: 10.09.23

SCALE: 1"= 20'

GRADING AND DRAINAGE PLAN (2 OF 2)

C-204

PAVEMENT MARKINGS

- PM1 — 36"X36", BLUE & WHIT, ADA WHEELCHAIR SYMBOL FOR ACCESSIBLE PARKING STALLS, TYP.
- PM2 — 4" WIDE, SSLW, DIAGONAL ACCESS AISLE STRIPING, TYP.
- PM3 — 4" WIDE, SSLW, PARKING STALL STRIPING, TYP.
- PM4 — 4" WIDE, DSLY, PAINTED CENTERLINE STRIPING, TYP.
- PM5 — 18" WIDE, SSLW, STOP BAR

GRAPHIC SCHEDULE

- DIRECTION OF TRAVEL ARROWS PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON PAVEMENT SURFACE
- PARKING STALL NUMBER PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON PAVEMENT SURFACE
- EM — 26 FOOT WIDE EMERGENCY VEHICLE LANE. PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON SURFACE
- SN — EMERGENCY SNOW STORAGE AREA

SIGN SCHEDULE

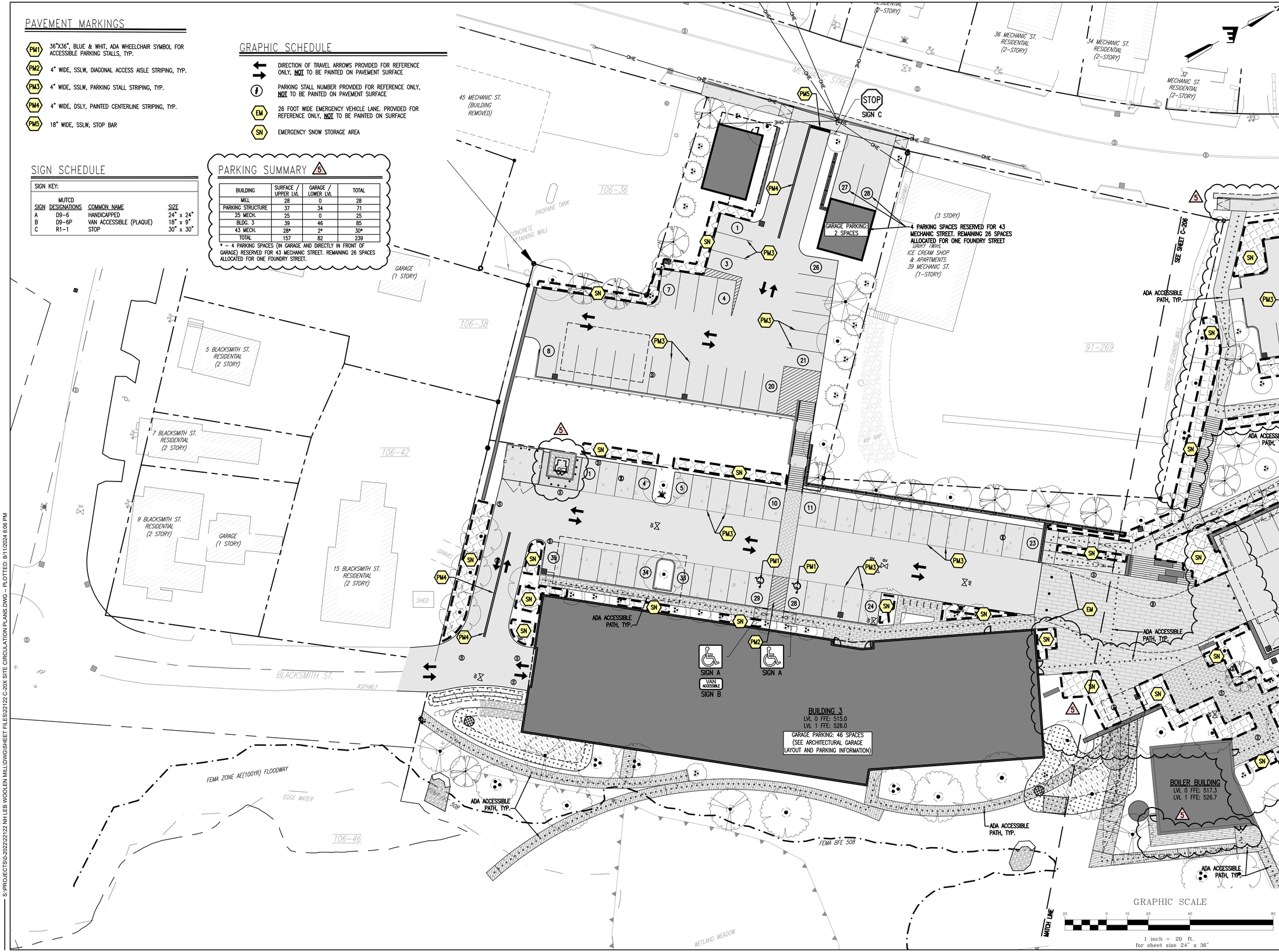
SIGN KEY:

SIGN	MUTCD DESIGNATIONS	COMMON NAME	SIZE
A	D9-6	HANDICAPPED	24" x 24"
B	D9-6P	VAN ACCESSIBLE (PLAQUE)	18" x 9"
C	R1-1	STOP	30" x 30"

PARKING SUMMARY (5)

BUILDING	SURFACE / UPPER LVL	GARAGE / LOWER LVL.	TOTAL
MILL	28	0	28
PARKING STRUCTURE	37	34	71
25 MECH.	25	0	25
BLDG. 3	39	46	85
43 MECH.	28*	2*	30*
TOTAL	157	82	239

* – 4 PARKING SPACES (IN GARAGE AND DIRECTLY IN FRONT OF GARAGE) RESERVED FOR 43 MECHANIC STREET. REMAINING 26 SPACES ALLOCATED FOR ONE FOUNDRY STREET.



SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	PLANNING COMMENTS	10.17.22
2	FSPR AMENDMENT SUBMISSION	10.09.23
3	FSPR RE-SUBMISSION	12.06.23
4	NOA CONFORMED	01.25.24
5	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

SCALE: 1"= 20'

SITE CIRCULATION AND SIGNAGE PLAN (1 OF 2)

C-205

S:\PROJECTS\0-202222\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X SITE CIRCULATION PLANS.DWG – PLOTTED: 8/11/2024 8:06 PM

PAVEMENT MARKINGS

- PM1 — 36"X36", BLUE & WHIT, ADA WHEELCHAIR SYMBOL FOR ACCESSIBLE PARKING STALLS, TYP.
- PM2 — 4" WIDE, SSLW, DIAGONAL ACCESS AISLE STRIPING, TYP.
- PM3 — 4" WIDE, SSLW, PARKING STALL STRIPING, TYP.
- PM4 — 4" WIDE, DSLY, PAINTED CENTERLINE STRIPING, TYP.
- PM5 — 18" WIDE, SSLW, STOP BAR

GRAPHIC SCHEDULE

- DIRECTION OF TRAVEL ARROWS PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON PAVEMENT SURFACE
- PARKING STALL NUMBER PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON PAVEMENT SURFACE
- EM — 26 FOOT WIDE EMERGENCY VEHICLE LANE. PROVIDED FOR REFERENCE ONLY, **NOT** TO BE PAINTED ON SURFACE
- SN — EMERGENCY SNOW STORAGE AREA

SIGN SCHEDULE

SIGN KEY:

SIGN	MUTCD DESIGNATIONS	COMMON NAME	SIZE
A	D9-6	HANDICAPPED	24" x 24"
B	D9-6P	VAN ACCESSIBLE (PLAQUE)	18" x 9"
C	R1-1	STOP	30" x 30"

PARKING SUMMARY 5

BUILDING	SURFACE / UPPER LVL	GARAGE / LOWER LVL	TOTAL
MILL	28	0	28
PARKING STRUCTURE	37	34	71
25 MECH.	25	0	25
BLDG. 3	39	46	85
43 MECH.	28*	2*	30*
TOTAL	157	82	239

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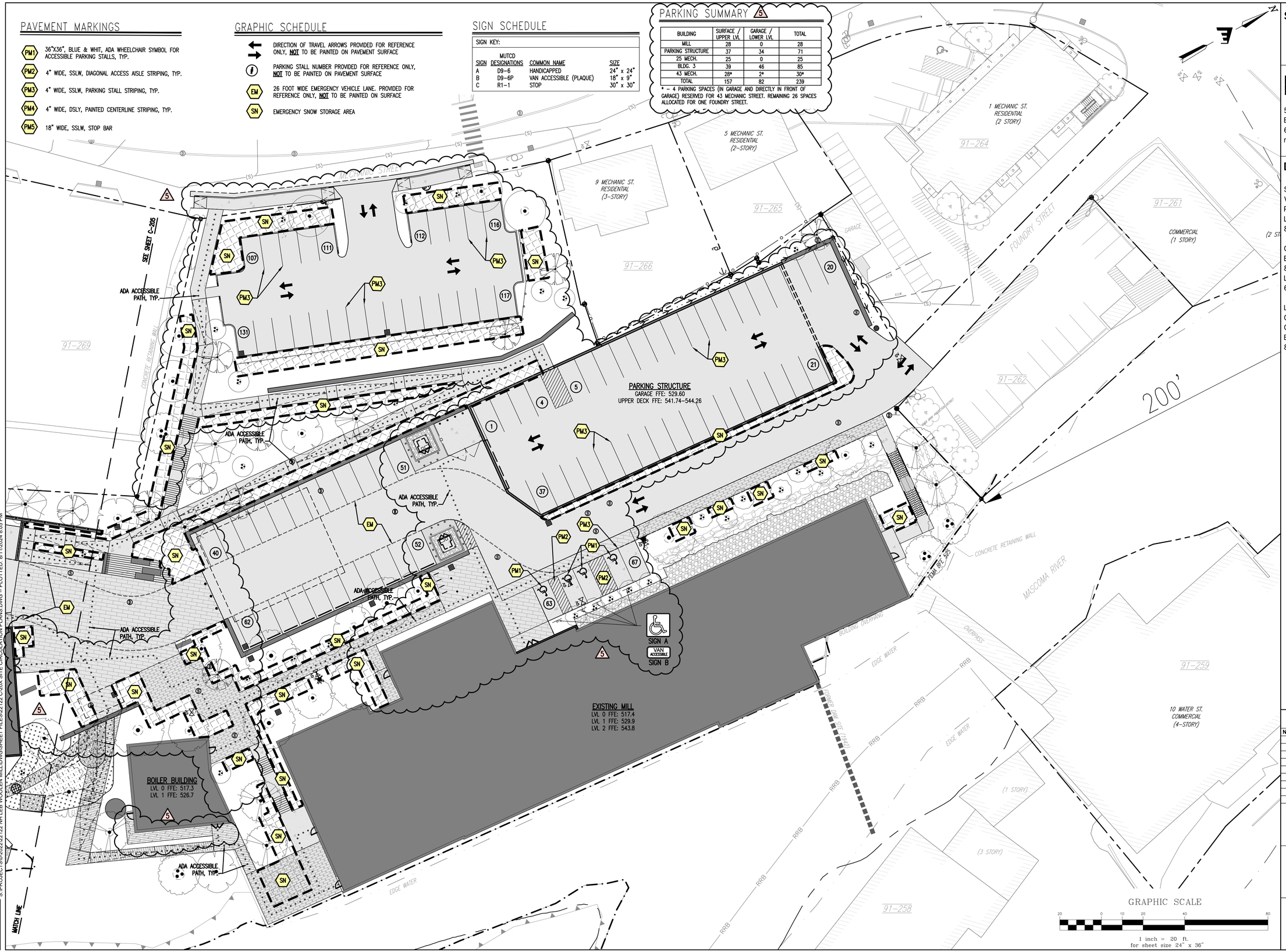

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SITE CIRCULATION AND SIGNAGE PLAN (2 OF 2)

C-206

S:\PROJECTS\0-202\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X SITE CIRCULATION PLANS.DWG – PLOTTED: 8/11/2024 8:05 PM

WATER NOTES

SEE SHETS C–305, C–306, AND C–307 FOR WATER SYSTEM PLAN AND PROFILES. SEE SHEET C–407 FOR WATER DETAILS AND NOTES.

SEWER NOTES

SEE SHEETS C–303 AND C–304 FOR GRAVITY COLLECTION SYSTEM PLAN AND PROFILES. SEE SHEET C–406 FOR SEWER DETAILS AND NOTES.

FIRE ALARM NOTES

THE PROPOSED MUNICIPAL FIRE ALARM LOOP SHALL BE PROVIDED IN A DEDICATED 2" CONDUIT, SAME TRENCH AS THE TELECOMM UTILITIES, WITH NO POWER, AND MUNICIPAL FIRE ALARM BOXES SHALL BE LOCATED ON EACH BUILDING TO THE SATISFACTION OF THE LEBANON FIRE DEPARTMENT.

ELECTRICAL SCHEDULE

SEE ELECTRICAL SITE PLAN AND ELECTRICAL DETAILS PREPARED BY MEP.

- E1 PROPOSED ELECTRICAL TRANSFORMER
- E2 PROPOSED ELECTRICAL VAULT
- E3 PROPOSED PRIMARY ELECTRICAL DUCT BANK (6") 2X2
- E4 PROPOSED SECONDARY ELECTRICAL DUCT BANK (4") 2X1
- E5 SERVICE RISER MOUNTED TO EXISTING POLE AND WIRING TIED INTO EXISTING OVERHEAD ELECTRICAL WIRES
- E6 EXACT LOCATION AND ELEVATION OF SERVICE ENTRANCE TO BE DETERMINED BY ELECTRICAL ENGINEER. REFER TO MEP PLANS AND DETAILS.
- E7 RELOCATE EXISTING ANCHOR POLE AND GUY WIRE

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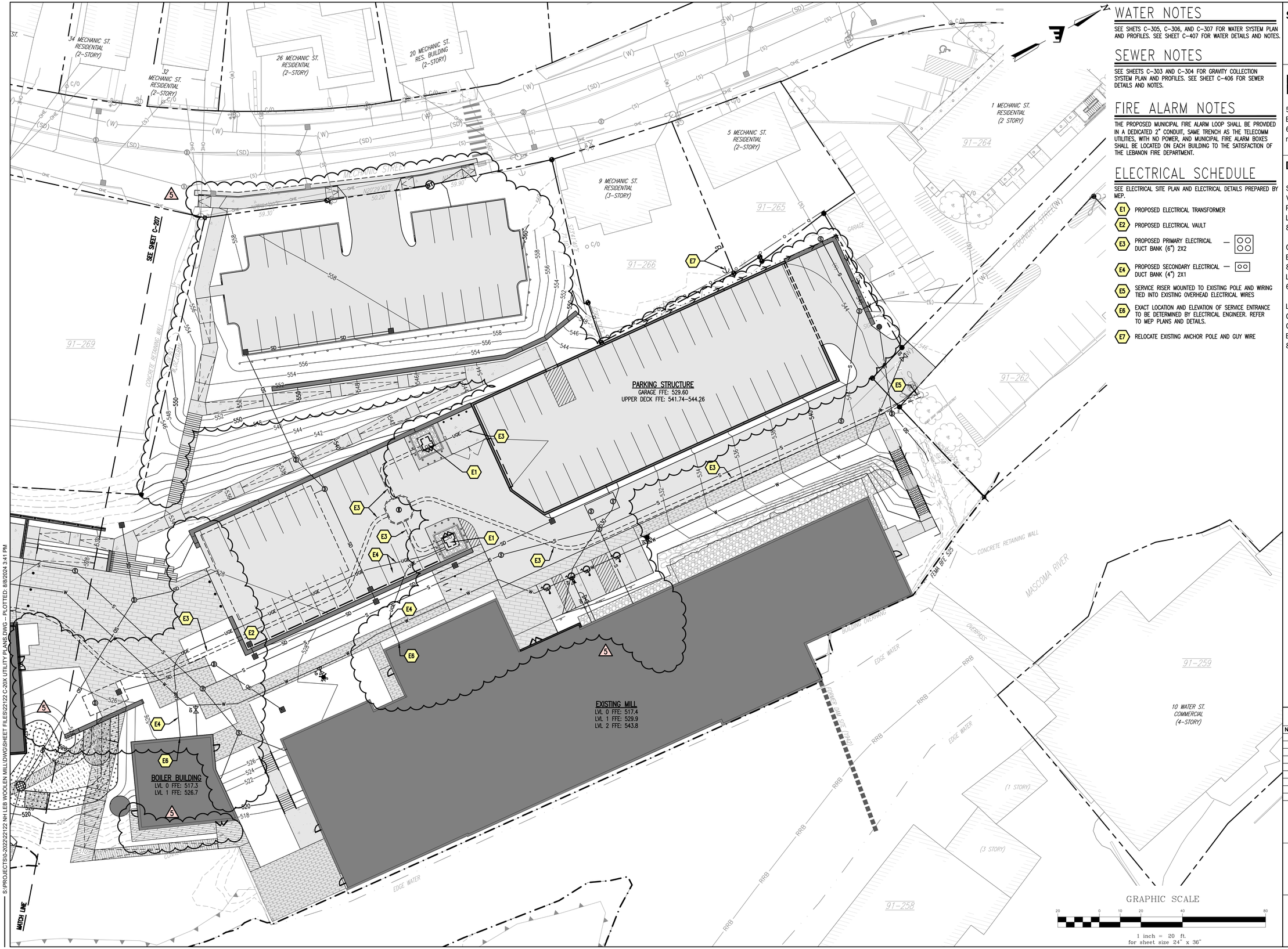
SCALE: 1"= 20'

UTILITY PLAN (1 OF 2)

C-207

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X UTILITY PLANS.DWG -- PLOTTED: 8/8/2024 3:42 PM



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- E7 RELOCATE EXISTING ANCHOR POLE AND GUY WIRE

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DATE: 08.15.22

SCALE: 1"= 20'

UTILITY PLAN (2 OF 2)

C-208

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X UTILITY PLANS.DWG -- PLOTTED: 8/8/2024 3:41 PM

EROSION CONTROL LEGEND

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGY
THE FOLLOWING TECHNIQUES WILL BE UTILIZED AS PART OF A SEDIMENT AND EROSION CONTROL PROGRAM. THE SEDIMENT AND EROSION CONTROL PROGRAM WILL BE IMPLEMENTED IN STAGES. CERTAIN ITEMS FROM ONE STAGE WILL LIKELY OVERLAP OR TAKE PLACE CONCURRENTLY WITH ITEMS FROM OTHER STAGES. HAY PRODUCTS SHALL NOT BE USED.

TEMPORARY INLET PROTECTION – STONE COLLARS AND/OR INLET SOCKS. INSTALL AS INDICATED ON PLANS. STONE TO BE REMOVED AND REPLACED WITH CLEAN STONE WHEN SEDIMENT IS ≤ 1/2 DEPTH OF STONE. REMOVE ALL SEDIMENT COLLECTED IN STRUCTURE OR SOCK AS SOON AS POSSIBLE.

STONE CHECK DAM
THIS STRUCTURAL MEASURE IS ALONG DITCHES/ SWALES AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO SLOW STORMWATER RUNOFF AND TRAP SEDIMENT PARTICLES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

PERMANENT EROSION CONTROL NETTING.
THIS STRUCTURAL MEASURE IS INSTALLED IN AREAS THAT HAVE SLOPES 3:1 AND GREATER AND IN OTHER LOCATIONS INDICATED ON THIS PLAN TO STABILIZE THE SLOPE AND REDUCE THE EROSION POTENTIAL. THE NETTING IS TYPICALLY IMPREGNATED WITH GRASS SEED AND SOMETIMES STAPLED TO THE EXPOSED SOIL. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

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THIS STRUCTURAL MEASURE IS A STABILIZED PAD OF AGGREGATE UNDERLAIN WITH FILTER FABRIC LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING AREA. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY OR STREETS. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE REMOVED, THE IMPACTED AREA SHALL BE SEEDED AND MULCHED.

TEMPORARY SEDIMENT BASIN
THIS STRUCTURAL MEASURE INVOLVES CONSTRUCTING TEMPORARY SEDIMENT BASINS IN THE LOCATION OF PROPOSED STORMWATER PONDS. GENERALLY THE STORMWATER PONDS CAN BE CONSTRUCTED AS SHOWN ON THE PLANS HOWEVER ORIFICE ON THE OUTLET STRUCTURES SHALL BE OMITTED UNTIL THE SITE IS STABILIZED TO IMPOUND RUNOFF AND ALLOW FOR SETTLING OF SUSPENDED FINES. THIS WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED. ONCE THE SITE IS STABILIZED, SEDIMENT SHALL BE REMOVED FROM THE BASINS AND THE OUTLET ORIFICE SHALL BE DRILLED INTO THE OUTLET STRUCTURE AS NOTED ON THE PLANS.

SEDIMENT TRAP

STAGING AREA

TEMPORARY STAGING AND WASTE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE NON-SOIL, NON-ERODIBLE MATERIALS MAY BE STORED. SOILS SHALL NOT BE STORED IN THESE AREAS.

SOIL STOCKPILE

TEMPORARY SOIL STOCKPILE AREAS (APPROXIMATE)
THESE ARE APPROVED LOCATIONS WHERE TOPSOIL AND OTHER SOIL MATERIALS MAY BE STORED. THESE STOCKPILES WILL BE PROTECTED FROM EROSION BY A NUMBER OF METHODS, INCLUDING INSTALLING SILT FENCING AROUND THE DOWN GRADIENT PERIMETER OF THE STOCKPILE AND SEEDING AND MULCHING THE STOCKPILE WHEN NOT IN USE FOR MORE THAN FIVE DAYS.

TEMPORARY STRAW FIBER ROLL
STRAW FIBER ROLLS ARE FLEXIBLE, CYLINDRICAL SEDIMENT RETENTION FIBER ROLLS (SRFRS) COMPRISED OF VARIOUS TYPES OF COMPRESSED MATRIXES, DESIGNED TO REDUCE HYDRAULIC ENERGY AND FILTER SEDIMENT-LADEN STORMWATER RUNOFF ON SLOPES AND IN CHANNELS. SRFRS ARE DESIGNED TO BE USED AS PERIMETER CONTROLS, SLOPE INTERCEPTOR DEVICES, CHECK DAMS, AROUND TEMPORARY SOIL STOCKPILES, AT CURB CUTS AND DRAIN INLETS. SRFRS SHOULD BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND SECURED WITH WOODEN STAKES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

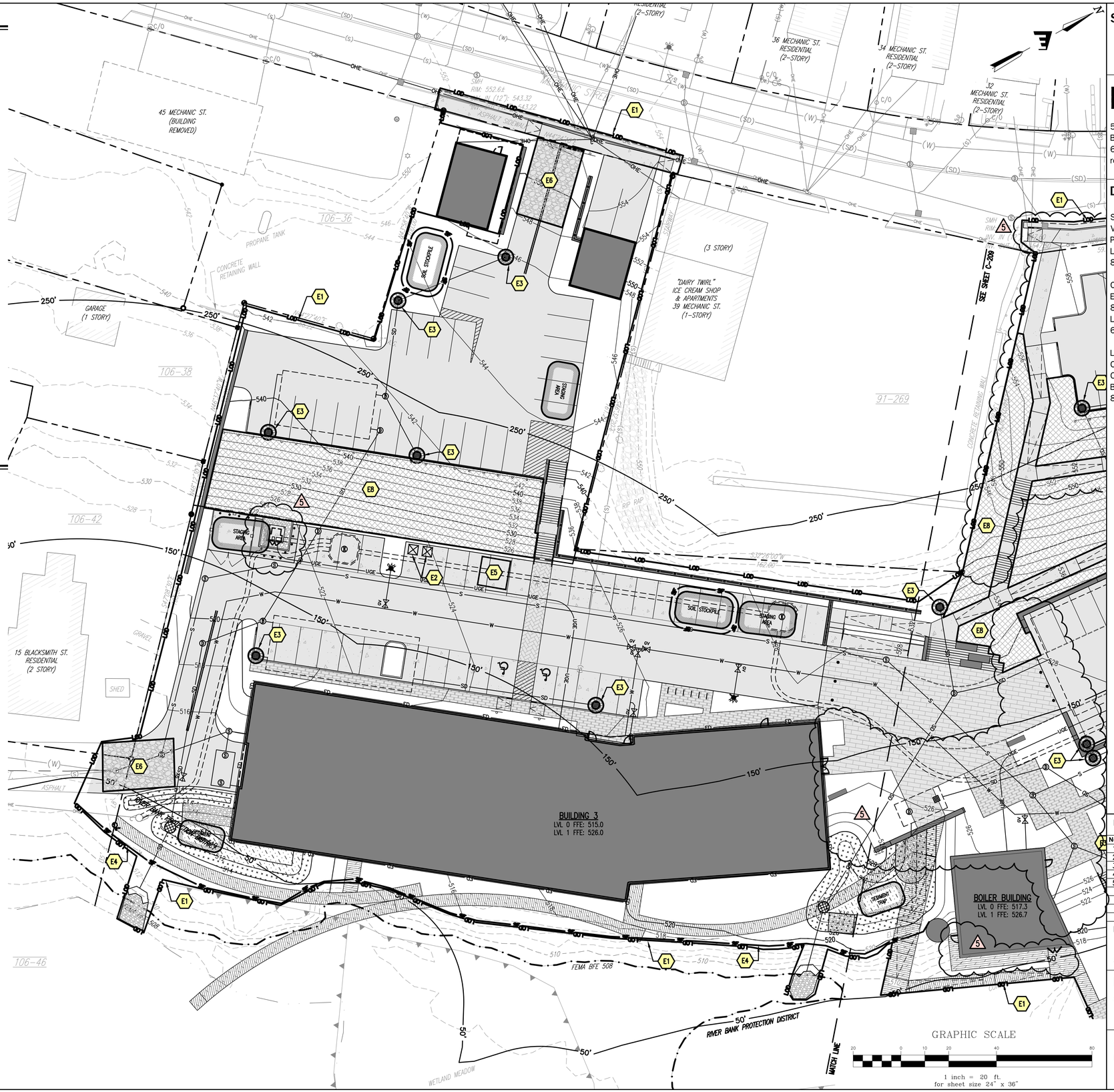
LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONTAIN ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW THE SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

CONSTRUCTION SEQUENCE

1. CONTRACTOR TO COORDINATE STOCKPILE AND STAGING AREAS WITH THE OWNER.
2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL HOST A PRECONSTRUCTION MEETING WITH OWNER, ENGINEER, CITY PLANNING, POLICE, FIRE, AND PUBLIC WORKS STAFF.
3. PRIOR TO ANY OTHER WORK, DOUBLE ROW OF STRAW WATTLES BE INSTALLED UPSLOPE OF THE WETLANDS DOWNGRADIENT OF SEGMENTED BLOCK WALL. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE WATTLES WHEN IT BECOMES 3 INCHES DEEP. THE WATTLES WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
5. INSTALL INLET PROTECTION ON EXISTING CATCH BASINS AFFECTED DURING CONSTRUCTION.
6. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
7. DEMO EXISTING STRUCTURES AS REQUIRED.
8. CLEAR AND GRUB, REMOVE LOOSE PAVING/DEMO PAVING AS REQUIRED AND HAUL OFF SITE USING EXISTING PARKING AREA AS STAGING.
9. GRADE DRIVE ENTRANCE AND EXCAVATE BUILDING PADS
10. BEGIN VERTICAL CONSTRUCTION OF BUILDING FOUNDATIONS CONCURRENT WITH WATER AND SEWER UTILITIES.
14. INSTALL STORMWATER PIPING AND STRUCTURES
15. EXCAVATE AND PREP FOR INFILTRATION SYSTEM, IMPORT BASE SUBGRADE MATERIALS AS NECESSARY.
16. EXCAVATE AND PREP FOR GRAVEL WETLAND, INSTALL PIPING AND APPURTENANCES, APPLY FABRIC AS INDICATED, IMPORT WASHED STONES AND PEA GRAVEL, WETLAND MUCK, COMPLETE WETLAND CONSTRUCTION
17. BACKFILL AND SUBGRADE PREP FOR NEW PARKING AND SIDEWALK AREAS
18. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
19. INSTALL LIGHT POLES.
20. PAVE BASE COURSE.
21. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, REPAIR AND REESTABLISH ALL DISTURBED VEGETATED/LAWN AREAS, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
22. PAVE WEARING COURSE.
23. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY BMPS.
24. ANTICIPATED FINAL COMPLETION DATE SUMMER/FALL 2024.

STORMWATER POLUTION PREVENTION NOTES

- E1 LIMIT OF DISTURBANCE
- E2 PORTABLE SANITATION FACILITIES, TO BE STAKED DOWN AND SECURED
- E3 INLET PROTECTION (TYP.)
- E4 DOUBLE ROW OF STRAW FIBER ROLL (TYP.)
- E5 CONCRETE WASHOUT
- E6 STABILIZED CONSTRUCTION ENTRANCE
- E7 CHECK DAM
- E8 EROSION CONTROL NETTING



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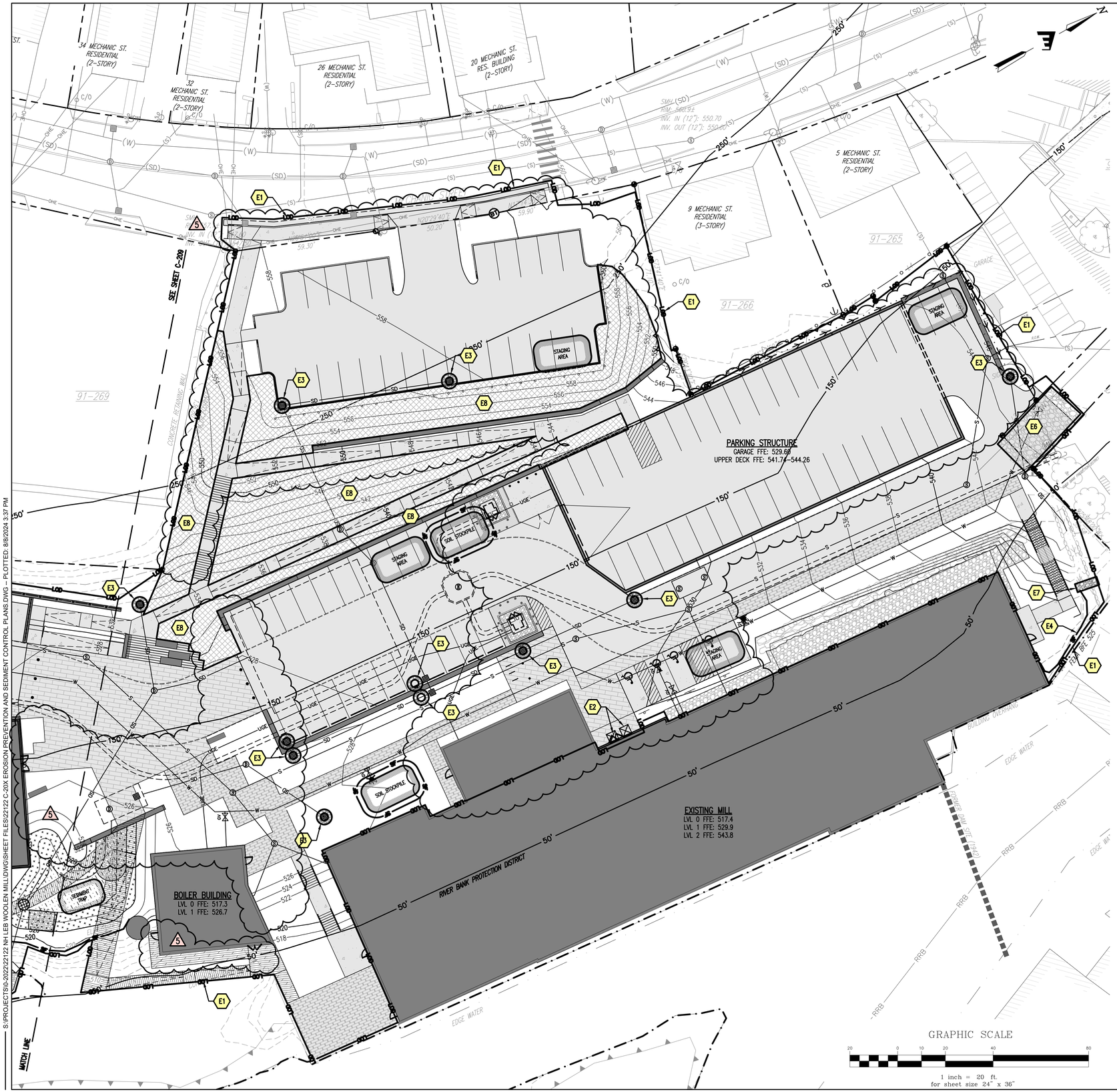
EROSION PREVENTION AND SEDIMENT CONTROL PLAN (1 OF 2)

C-209

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X EROSION PREVENTION AND SEDIMENT CONTROL PLANS.DWG – PLOTTED: 8/8/2024 3:38 PM



S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-20X EROSION PREVENTION AND SEDIMENT CONTROL PLANS.DWG – PLOTTED: 8/8/2024 3:37 PM

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STRAW FIBER ROLLS ARE FLEXIBLE, CYLINDRICAL SEDIMENT RETENTION FIBER ROLLS (SRFRS) COMPRISED OF VARIOUS TYPES OF COMPRESSED MATRIXES, DESIGNED TO REDUCE HYDRAULIC ENERGY AND FILTER SEDIMENT-LADEN STORMWATER RUNOFF ON SLOPES AND IN CHANNELS. SRFRS ARE DESIGNED TO BE USED AS PERIMETER CONTROLS, SLOPE INTERCEPTOR DEVICES, CHECK DAMS, AROUND TEMPORARY SOIL STOCKPILES, AT CURB CUTS AND DRAIN INLETS. SRFRS SHOULD BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND SECURED WITH WOODEN STAKES. THESE WILL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN PERMANENTLY STABILIZED.

LIMITS OF DISTURBANCE
THE CONTRACTOR SHALL CONTAIN ANY EARTH MOVING ACTIVITIES WITHIN THE DESIGNATED LIMITS SHOWN ON THIS PLAN. THE ENGINEER SHALL REVIEW THE SITE TO MAKE ANY ADJUSTMENTS TO ACCOUNT FOR ENVIRONMENTALLY SENSITIVE AREAS, SPECIMEN TREES AND SPECIAL AREAS OF CONCERN.

CONSTRUCTION SEQUENCE

1. CONTRACTOR TO COORDINATE STOCKPILE AND STAGING AREAS WITH THE OWNER.
2. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL HOST A PRECONSTRUCTION MEETING WITH OWNER, ENGINEER, CITY PLANNING, POLICE, FIRE, AND PUBLIC WORKS STAFF.
3. PRIOR TO ANY OTHER WORK, DOUBLE ROW OF STRAW WATTLES BE INSTALLED UPSLOPE OF THE WETLANDS DOWNGRADIENT OF SEGMENTED BLOCK WALL. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE WATTLES WHEN IT BECOMES 3 INCHES DEEP. THE WATTLES WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
5. INSTALL INLET PROTECTION ON EXISTING CATCH BASINS AFFECTED DURING CONSTRUCTION.
6. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
7. DEMO EXISTING STRUCTURES AS REQUIRED.
8. CLEAR AND GRUB, REMOVE LOOSE PAVING/DEMO PAVING AS REQUIRED AND HAUL OFF SITE USING EXISTING PARKING AREA AS STAGING.
9. GRADE DRIVE ENTRANCE AND EXCAVATE BUILDING PADS
10. BEGIN VERTICAL CONSTRUCTION OF BUILDING FOUNDATIONS CONCURRENT WITH WATER AND SEWER UTILITIES.
14. INSTALL STORMWATER PIPING AND STRUCTURES
15. EXCAVATE AND PREP FOR INFILTRATION SYSTEM, IMPORT BASE SUBGRADE MATERIALS AS NECESSARY.
16. EXCAVATE AND PREP FOR GRAVEL WETLAND, INSTALL PIPING AND APPURTENANCES, APPLY FABRIC AS INDICATED, IMPORT WASHED STONES AND PEA GRAVEL, WETLAND MUCK, COMPLETE WETLAND CONSTRUCTION
17. BACKFILL AND SUBGRADE PREP FOR NEW PARKING AND SIDEWALK AREAS
18. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
19. INSTALL LIGHT POLES.
20. PAVE BASE COURSE.
21. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, REPAIR AND REESTABLISH ALL DISTURBED VEGETATED/LAWN AREAS, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
22. PAVE WEARING COURSE.
23. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY BMPS.
24. ANTICIPATED FINAL COMPLETION DATE SUMMER/FALL 2024.

STORMWATER POLUTION PREVENTION NOTES

- E1 LIMIT OF DISTURBANCE
- E2 PORTABLE SANITATION FACILITIES, TO BE STAKED DOWN AND SECURED
- E3 INLET PROTECTION (TYP.)
- E4 DOUBLE ROW OF STRAW FIBER ROLL (TYP.)
- E5 CONCRETE WASHOUT
- E6 STABILIZED CONSTRUCTION ENTRANCE
- E7 CHECK DAM
- E8 EROSION CONTROL NETTING

SITE PLAN REVIEW

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Design Team

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STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	10.09.23
2	FSPR RE-SUBMISSION	12.06.23
3	REVISED PER SPR COMMENTS	01.25.24
4	REVISED PER SPR COMMENTS	01.25.24
5	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

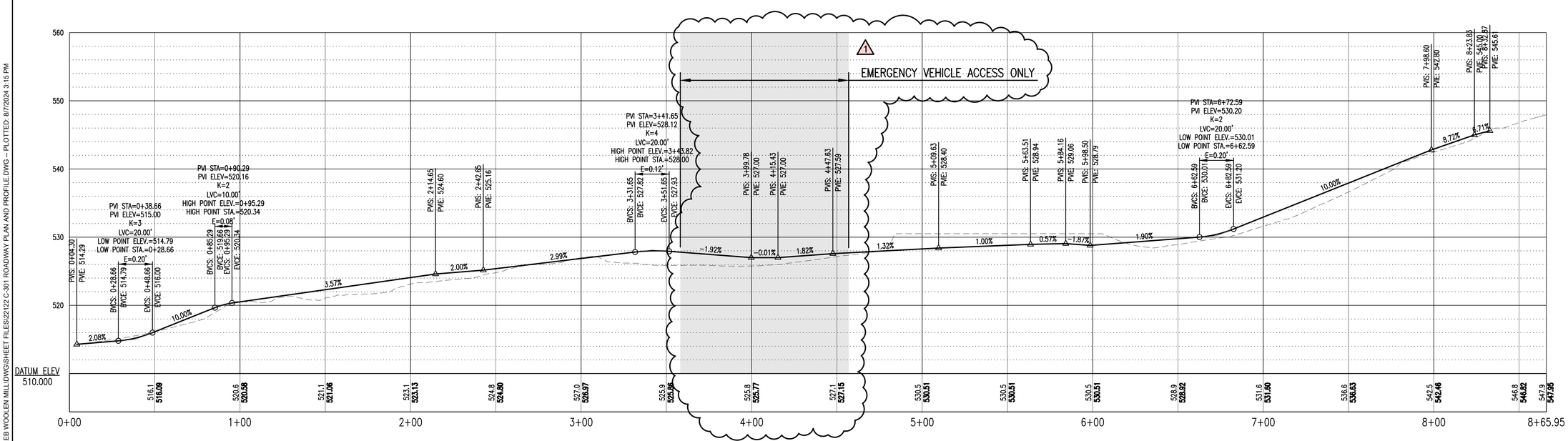
SCALE: 1"= 20'

EROSION PREVENTION AND SEDIMENT CONTROL PLAN (2 OF 2)

C-210

ROADWAY PLAN VIEW, STA. 0+00 – 8+70

SCALE: 1" = 30'



ROADWAY PROFILE, STA. 0+00 – 8+70

SCALE: HORIZ. 1" = 40'
VERT.: 1" = 10'

GRAPHIC SCALE

1 inch = 40 ft.
for sheet size 24" x 36"

SITE PLAN REVIEW

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1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	08.12.24

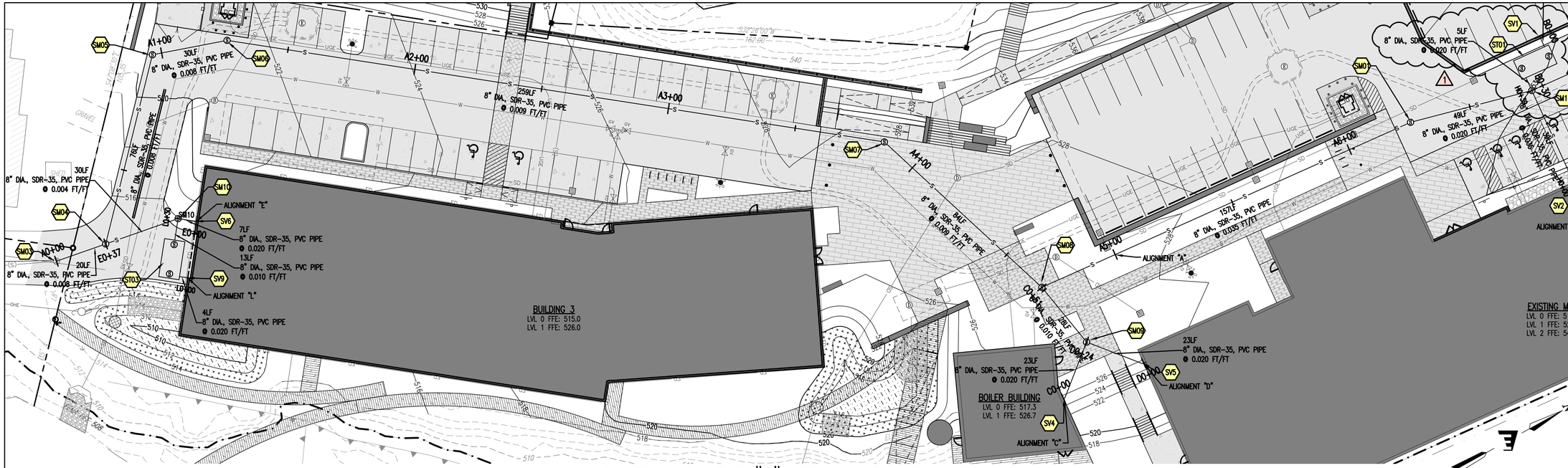
DATE: 10.09.23

SCALE: 1"= 40'

ROADWAY PLAN AND PROFILE

C-301

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-301 ROADWAY PLAN AND PROFILE.DWG – PLOTTED: 8/7/2024 3:15 PM



SEWER ALIGNMENT "A", STA. 0+00 – 7+14.76

SCALE: HORIZ. 1" = 20'

SEWER SCHEDULE

SEWER MANHOLES

SM01 6' ID, PRECAST CONCRETE, INTERIOR DROP MANHOLE
RIM: 529.29
INV. IN: 520.83 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 520.73 (8" DIA., SDR-35, PVC PIPE)

SM03 EXISTING CONCRETE MANHOLE
RIM: 514.29
INV. IN: 510.50 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.40 (8" DIA., SDR-35, PVC PIPE)

SM04 4' ID, PRECAST CONCRETE MANHOLE
RIM: 514.74
INV. IN: 510.76 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 510.76 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.66 (8" DIA., SDR-35, PVC PIPE)

SM05 4' ID, PRECAST CONCRETE MANHOLE
RIM: 520.70
INV. IN: 511.47 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 511.37 (8" DIA., SDR-35, PVC PIPE)

SM06 4' ID, PRECAST CONCRETE MANHOLE
RIM: 521.39
INV. IN: 511.81 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 511.71 (8" DIA., SDR-35, PVC PIPE)

SM07 6' ID, PRECAST CONCRETE, INTERIOR DROP MANHOLE
RIM: 527.74
INV. IN: 514.30 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 514.20 (8" DIA., SDR-35, PVC PIPE)

SM08 4' ID, PRECAST CONCRETE MANHOLE
RIM: 526.76
INV. IN: 515.15 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 515.15 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 515.05 (8" DIA., SDR-35, PVC PIPE)

SM09 4' ID, PRECAST CONCRETE MANHOLE
RIM: 526.75
INV. IN: 515.53 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 515.53 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 515.43 (8" DIA., SDR-35, PVC PIPE)

SM10 4' ID, PRECAST CONCRETE MANHOLE
RIM: 515.94
INV. IN: 510.98 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 510.98 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.88 (8" DIA., SDR-35, PVC PIPE)

SM16 (1) 5' ID, PRECAST CONCRETE MANHOLE INTERIOR DROP MANHOLE
RIM: 530.02
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 525.15 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 521.81 (8" DIA., SDR-35, PVC PIPE)

SEWER SERVICES

SV1 (1) 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 525.60 (8" DIA., SDR-35, PVC PIPE)

SV2 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 523.30 (8" DIA., SDR-35, PVC PIPE)

SV4 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 516.00 (8" DIA., SDR-35, PVC PIPE)

SV5 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 516.00 (8" DIA., SDR-35, PVC PIPE)

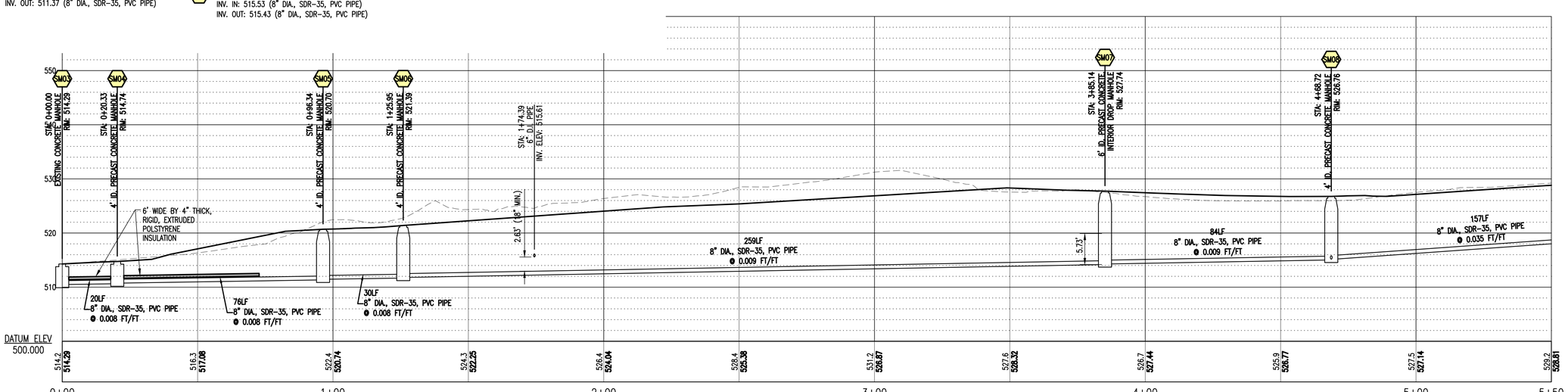
SV6 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 511.12 (8" DIA., SDR-35, PVC PIPE)

SV9 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 511.45 (8" DIA., SDR-35, PVC PIPE)

OIL/GRIT SEPARATORS

ST01 (1) 1500 GAL SEPARATOR
TOP TANK: 526.84
INV IN: 525.51
INV. OUT: 525.26
BOTTOM TANK: 521.34

ST03 1500 GAL SEPARATOR
TOP TANK: 512.69
INV IN: 511.36
INV. OUT: 511.11
BOTTOM TANK: 507.19



PARTIAL SEWER PROFILE – ALIGNMENT "A", STA. 0+00 – 5+50

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'

GRAPHIC SCALE

1 inch = 20 ft.
for sheet size 24" x 36"

SITE PLAN REVIEW

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1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	08.12.24

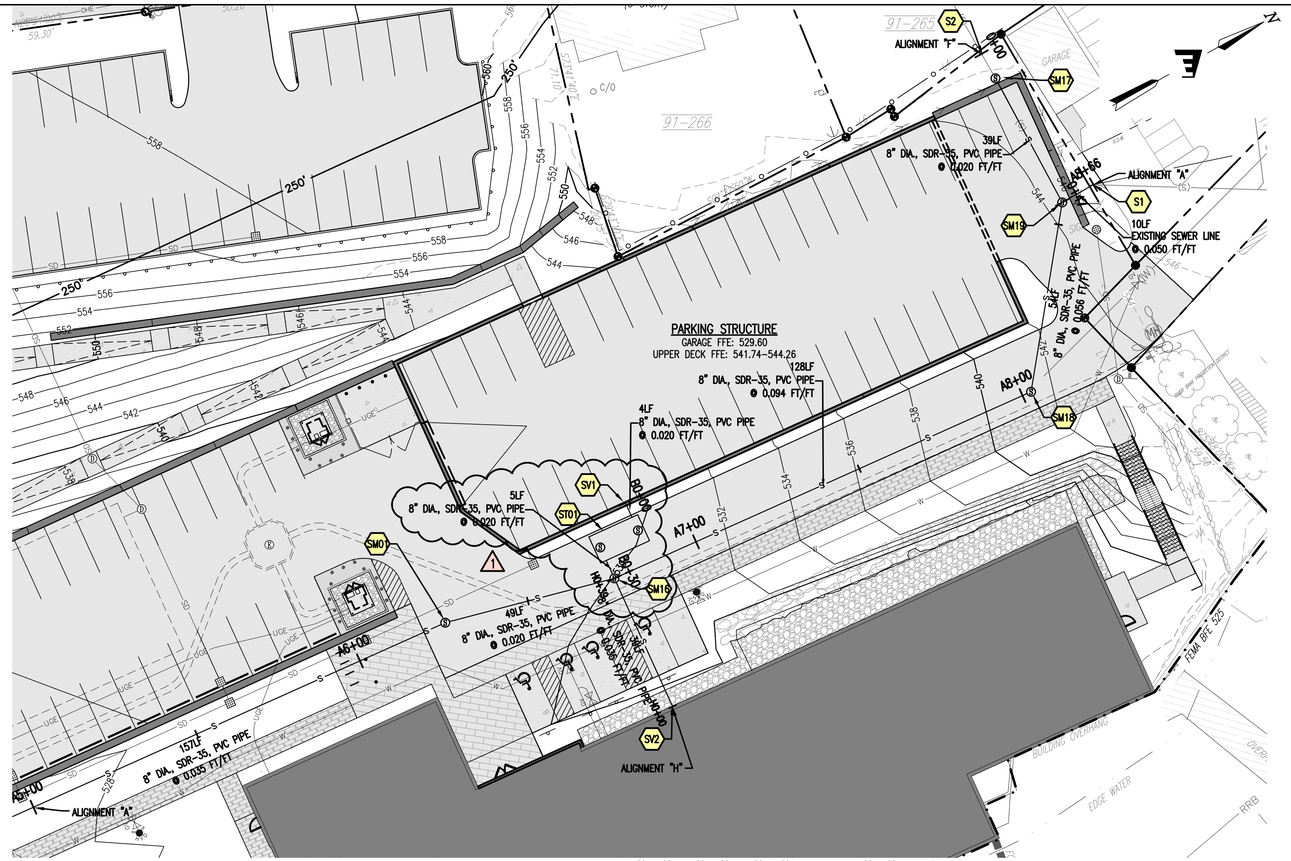
DATE: 08.15.22

SCALE: 1"= 20'

SEWER PLAN AND PROFILE (1 OF 3)

C-302

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X SEWER PLAN AND PROFILE.DWG -- PLOTTED: 8/8/2024 9:38 AM



SEWER ALIGNMENTS "A", "F", "H" AND "J"

SCALE: HORIZ. 1" = 20'

SEWER SCHEDULE

SEWER MANHOLES

SM01 — 6' ID, PRECAST CONCRETE, INTERIOR DROP MANHOLE
RIM: 529.29
INV. IN: 520.83 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 520.73 (8" DIA., SDR-35, PVC PIPE)

SM16 — 5' ID, PRECAST CONCRETE MANHOLE, INTERIOR DROP MANHOLE
RIM: 530.02
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 525.15 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 521.81 (8" DIA., SDR-35, PVC PIPE)

SM17 — 6' ID, PRECAST CONCRETE, INTERIOR DROP MANHOLE
RIM: 551.80
INV. IN: 546.02 (EXISTING SEWER LINE)
INV. OUT: 537.84 (8" DIA., SDR-35, PVC PIPE)

SM18 — 4' ID, PRECAST CONCRETE MANHOLE
RIM: 541.38
INV. IN: 533.97 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 533.87 (8" DIA., SDR-35, PVC PIPE)

SM19 — 6' ID, PRECAST CONCRETE, INTERIOR DROP MANHOLE
RIM: 544.17
INV. IN: 541.31 (EXISTING SEWER LINE)
INV. IN: 537.05 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 536.95 (8" DIA., SDR-35, PVC PIPE)

SEWER SERVICES

SV1 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 525.60 (8" DIA., SDR-35, PVC PIPE)

SV2 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 523.30 (8" DIA., SDR-35, PVC PIPE)

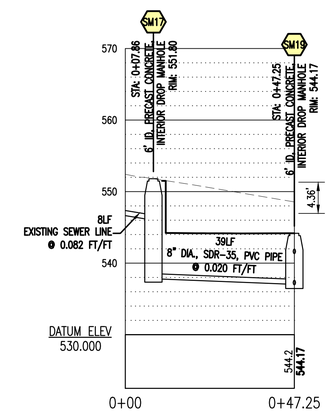
MISCELLANEOUS

S1 — TIE NEW SEWER PIPE TO EXISTING SEWER PIPE. INVERT ELEV. TO BE DETERMINED IN THE FIELD.

S2 — TIE NEW SEWER PIPE TO EXISTING SEWER PIPE. INVERT ELEV. TO BE DETERMINED IN THE FIELD.

OIL/GRIT SEPARATORS

ST01 — 1500 GAL SEPARATOR
TOP TANK: 526.84
INV IN: 525.51
INV. OUT: 525.26
BOTTOM TANK: 521.34



SEWER PROFILE – ALIGNMENT "F", STA. 0+00 – 0+47.25

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'

GRAPHIC SCALE

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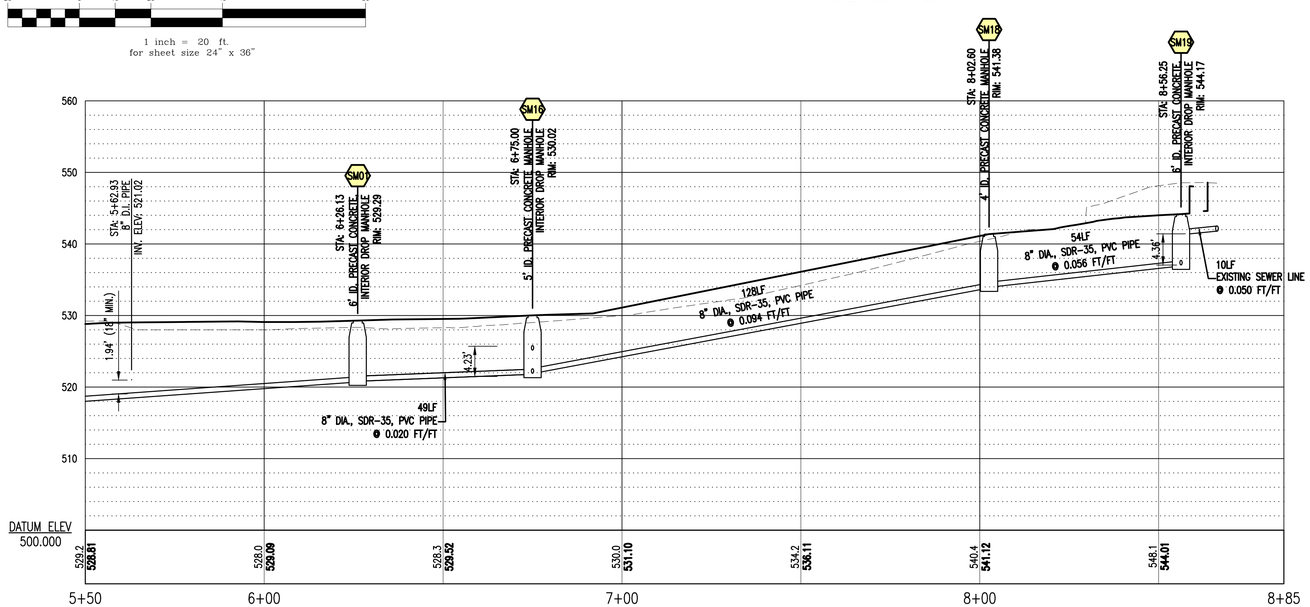
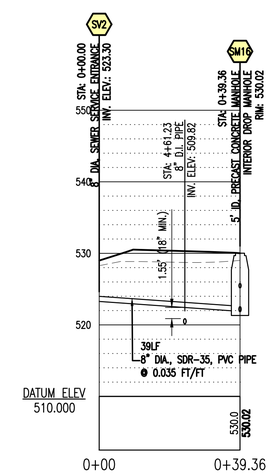
1 inch = 20 ft.
for sheet size 24" x 36"



PARTIAL SEWER PROFILE – ALIGNMENT "A", STA. 5+50 – 8+85

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'



SEWER PROFILE – ALIGNMENT "H", STA. 0+00 – 0+39.36

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	08.12.24

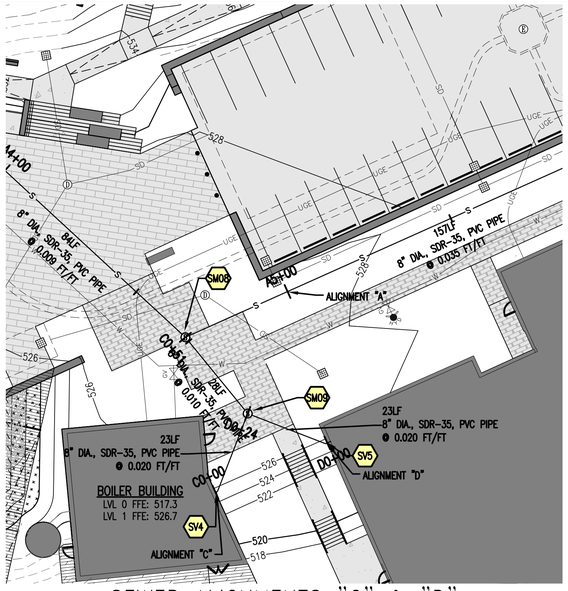
DATE: 08.15.22

SCALE: 1"= 20'

SEWER PLAN AND PROFILE (2 OF 3)

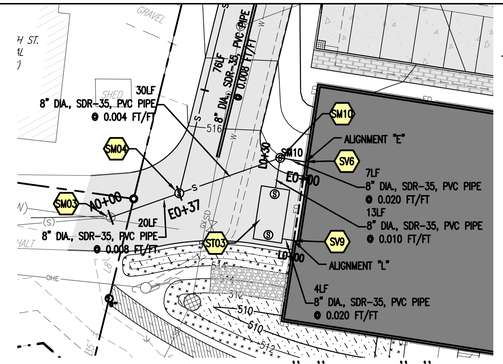
C-303

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X SEWER PLAN AND PROFILE.DWG – PLOTTED: 8/8/2024 9:39 AM



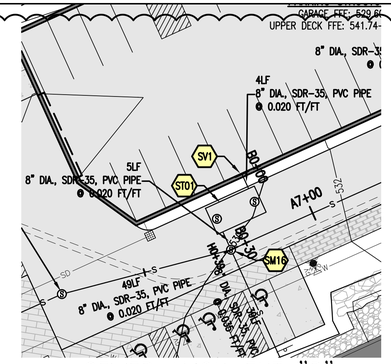
SEWER ALIGNMENTS "C" & "D"

SCALE: HORIZ. 1" = 20'



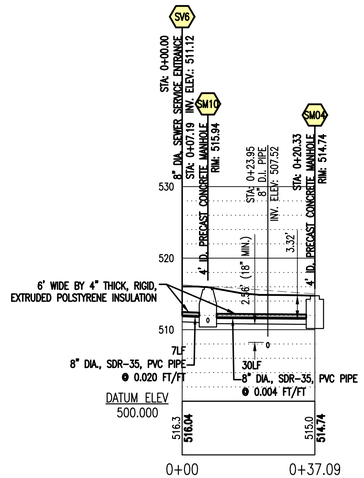
SEWER ALIGNMENT "E" AND "L"

SCALE: HORIZ. 1" = 20'



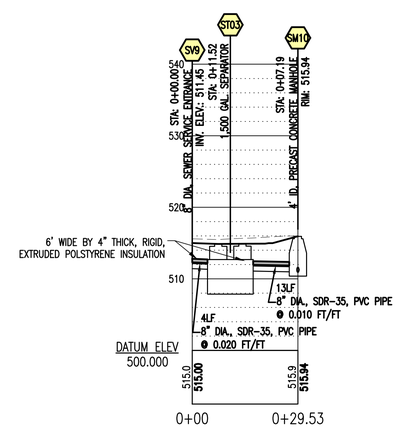
SEWER ALIGNMENT "B"

SCALE: HORIZ. 1" = 20'



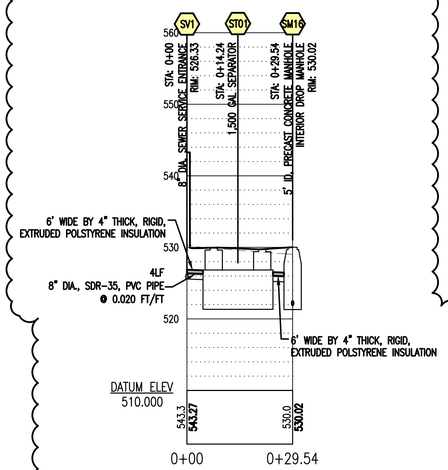
SEWER PROFILE – ALIGNMENT "E", STA. 0+00 – 0+37.09

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'



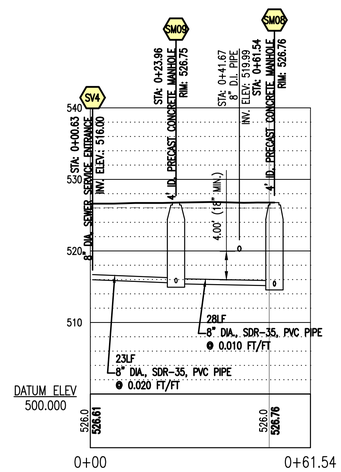
SEWER PROFILE – ALIGNMENT "L", STA. 0+00 – 0+29.53

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'



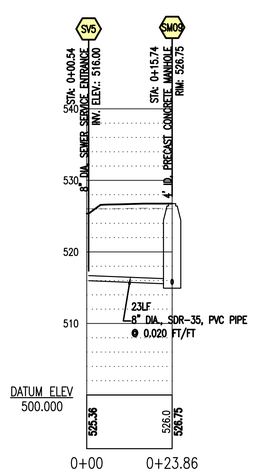
SEWER PROFILE – ALIGNMENT "B", STA. 0+00 – 0+29.54

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'



SEWER PROFILE – ALIGNMENT "C", STA. 0+00 – 0+61.54

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'



SEWER PROFILE – ALIGNMENT "D", STA. 0+00 – 0+15.74

SCALE: HORIZ. 1" = 20'
VERT.: 1" = 10'

SEWER SCHEDULE

SEWER MANHOLES

SM03 — EXISTING CONCRETE MANHOLE
RIM: 514.29
INV. IN: 510.50 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.40 (8" DIA., SDR-35, PVC PIPE)

SM04 — 4' ID, PRECAST CONCRETE MANHOLE
RIM: 514.74
INV. IN: 510.76 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 510.76 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.66 (8" DIA., SDR-35, PVC PIPE)

SM08 — 4' ID, PRECAST CONCRETE MANHOLE
RIM: 526.76
INV. IN: 515.15 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 515.15 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 515.05 (8" DIA., SDR-35, PVC PIPE)

SM09 — 4' ID, PRECAST CONCRETE MANHOLE
RIM: 526.75
INV. IN: 515.53 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 515.53 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 515.43 (8" DIA., SDR-35, PVC PIPE)

SEWER MANHOLES

SM10 — 4' ID, PRECAST CONCRETE MANHOLE
RIM: 515.94
INV. IN: 510.98 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 510.98 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 510.88 (8" DIA., SDR-35, PVC PIPE)

1 **SM16** — 5' ID, PRECAST CONCRETE MANHOLE
INTERIOR DROP MANHOLE
RIM: 530.02
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 525.15 (8" DIA., SDR-35, PVC PIPE)
INV. IN: 521.91 (8" DIA., SDR-35, PVC PIPE)
INV. OUT: 521.81 (8" DIA., SDR-35, PVC PIPE)

OIL/GRIT SEPARATORS

1 **ST01** — 1500 GAL SEPARATOR
TOP TANK: 526.84
INV IN: 525.51
INV. OUT: 525.26
BOTTOM TANK: 521.34

ST03 — 1500 GAL SEPARATOR
TOP TANK: 512.69
INV IN: 511.36
INV. OUT: 511.11
BOTTOM TANK: 507.19

SEWER SERVICES

1 **SV1** — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 525.60 (8" DIA., SDR-35, PVC PIPE)

SV4 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 516.00 (8" DIA., SDR-35, PVC PIPE)

SV5 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 516.00 (8" DIA., SDR-35, PVC PIPE)

SV6 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 511.12 (8" DIA., SDR-35, PVC PIPE)

SV9 — 8" DIA, SEWER SERVICE ENTRANCE
INV. ELEV.: 511.45 (8" DIA., SDR-35, PVC PIPE)

GRAPHIC SCALE

20 0 10 20 40 80

1 inch = 20 ft.
for sheet size 24" x 36"

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
Nicholas J. Hope
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

SCALE: 1"= 20'

SEWER PLAN AND PROFILE (3 OF 3)

C-304

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X SEWER PLAN AND PROFILE.DWG – PLOTTED: 8/8/2024 9:39 AM

WATER LINE PLAN VIEW – ALIGNMENT "A", STA. 0+00 – 4+50

SCALE: HORIZ. 1" = 20'

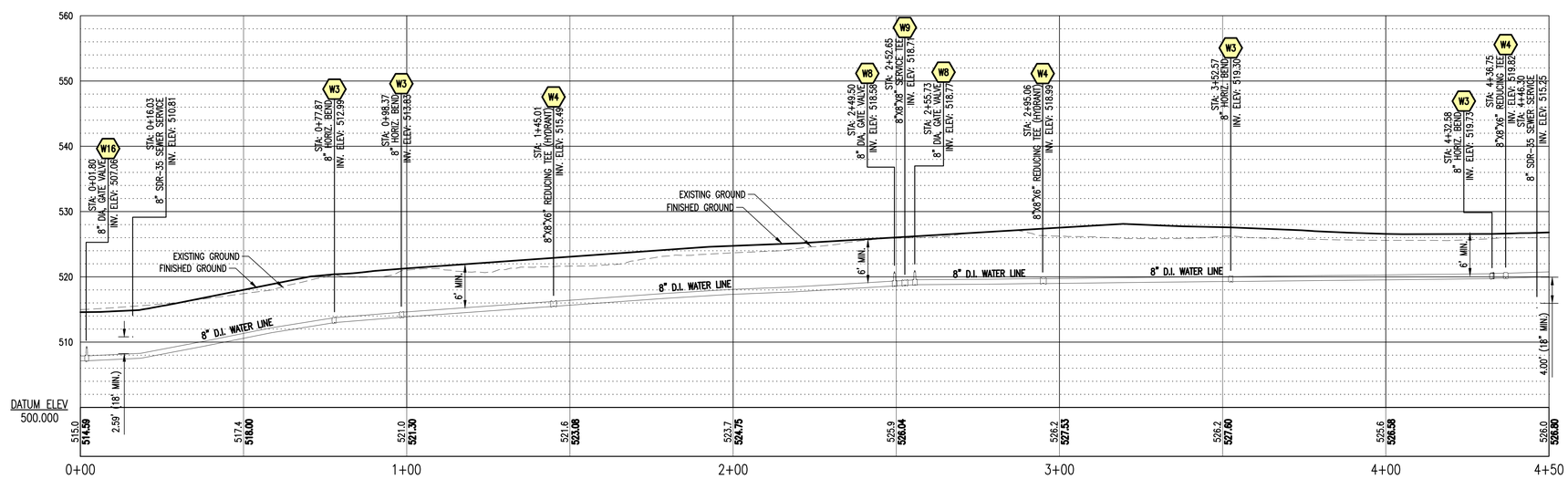
WATER SCHEDULE

UNDERGROUND UTILITIES, ELECTRIC, TELEPHONE AND CABLE, MUST MAINTAIN A MINIMUM CLEARANCE OF 10 FT. FROM ALL PROPOSED WATER LINES.

- W1 — 12" TAPPING SLEEVE AND VALVE WITH 12"X8" REDUCER FOR CONNECTION TO EXISTING 12" WATERMAIN, COORDINATE WORK WITH LEBANON DEPARTMENT OF PUBLIC WORKS.
- W2 — 8" DIA. DUCTILE IRON WATER LINE
- W3 — 8" DIA. HORIZONTAL BEND FITTING AS NEEDED TO MATCH ALIGNMENT SHOWN, TYP.
- W4 — 8"X8"X6" REDUCING HYDRANT TEE, TYP.
- W5 — 6" DIA. GATE VALVE, MJXMJ WITH MECHANICAL RESTRAINTS, TYP.
- W6 — 6" DIA. DUCTILE IRON WATER LINE, TYP.
- W7 — FIRE HYDRANT, TYP.
- W8 — 8" DIA. GATE VALVE, MJXMJ WITH MECHANICAL RESTRAINTS, TYP.
- W9 — 8"X8"X8" TEE FOR BUIDLING SERVICE, TYP.
- W10 — 8"X8"X6" REDUCING TEE FOR DOMESTIC WATER SERVICE, TYP.
- W11 — 6" DOMESTIC WATER SERVICE ENTRANCE, TYP.
- W12 — 8" FIRE SERVICE ENTRANCE, TYP.
- W13 — 8"X8"X8" HYDRANT TEE
- W14 — 30' WIDE WATER EASEMENT CENTERED ON AS-BUILT WATER LINE AND SHALL INCLUDE HYDRANTS AND HYDRANT SERVICE LINES
- W15 — FIRE DEPARTMENT CONNECTION, REFER TO MEP PLANS FOR EXACT LOCATION AND DETAILS.
- W16 — 8" DIA. GATE VALVE, MJXMJ WITH MECHANICAL RESTRAINTS, TYP. ON EXISTING WATER LINE

GRAPHIC SCALE

1 inch = 20 ft.
for sheet size 24" x 36"



WATER LINE PROFILE VIEW – ALIGNMENT "A", STA. 0+00 – 4+50

SCALE: HORIZ. 1" = 20'

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
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1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
3	FSPR AMENDMENT SUBMISSION	08.12.24

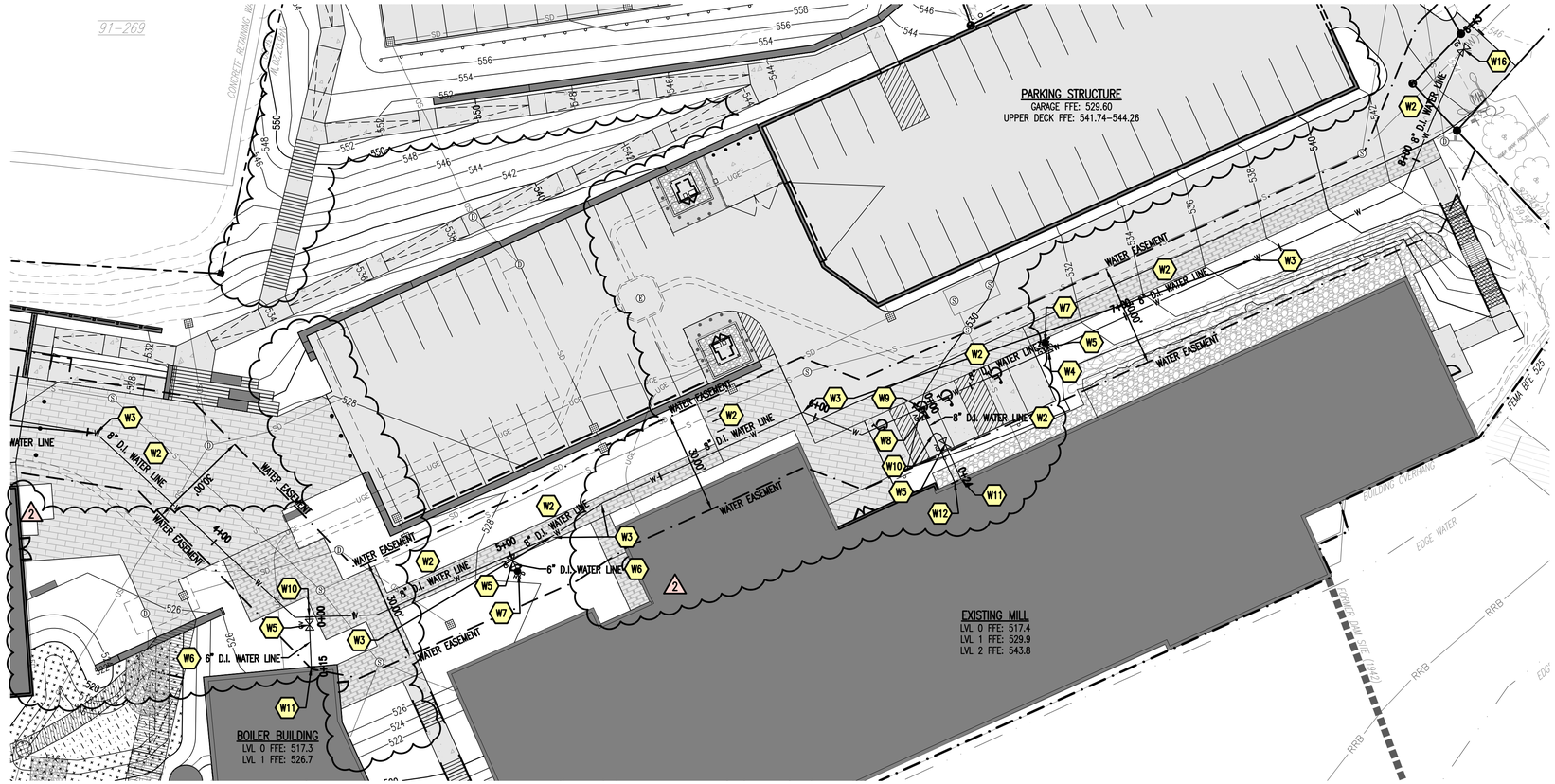
DATE: 10.09.23

SCALE: 1"= 20'

WATER LINE PLAN AND PROFILE (1 OF 3)

C-306

S:\PROJECTS\0-20222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X WATER PLAN AND PROFILE.DWG – PLOTTED: 8/8/2024 2:29 PM



WATER LINE PLAN VIEW – ALIGNMENT "A", STA. 4+00 – 7+95

SCALE: HORIZ. 1" = 20'

WATER SCHEDULE

UNDERGROUND UTILITIES, ELECTRIC, TELEPHONE AND CABLE, MUST MAINTAIN A MINIMUM CLEARANCE OF 10 FT. FROM ALL PROPOSED WATER LINES.

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- W7 — FIRE HYDRANT, TYP.
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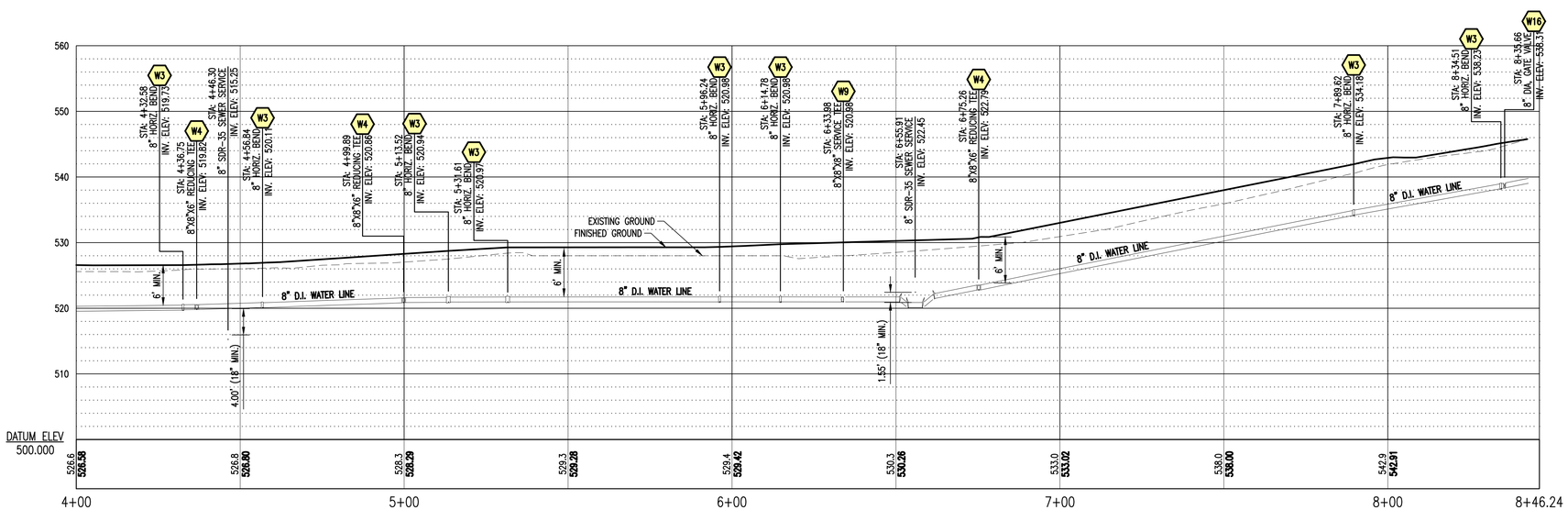
GRAPHIC SCALE

20 0 10 20 40 80

1 inch = 20 ft.
for sheet size 24" x 36"



WATER LINE PROFILE VIEW – ALIGNMENT "A", STA. 4+00 –7+95

SCALE: HORIZ. 1" = 20'

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NICHOLAS J. FIORE
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1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	REVISED PER SPR COMMENTS	01.25.24
2	FSPR AMENDMENT SUBMISSION	08.12.24

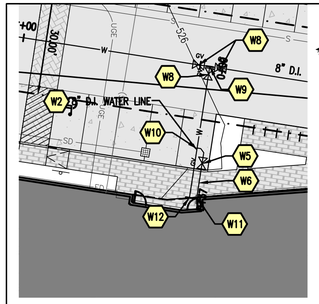
DATE: 10.09.23

SCALE: 1"= 20'

WATER LINE PLAN AND PROFILE (2 OF 3)

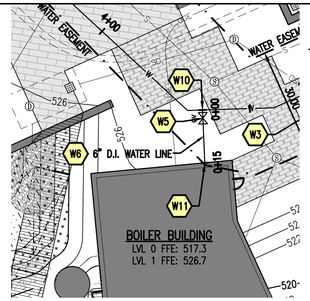
C-307

S:\PROJECTS\0-202\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X WATER PLAN AND PROFILE.DWG – PLOTTED: 8/11/2024 8:26 PM



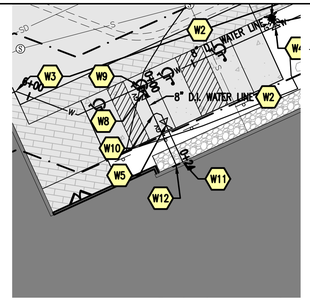
WATER LINE PLAN VIEW
BUILDING 3 SERVICE

SCALE: HORIZ. 1" = 20'



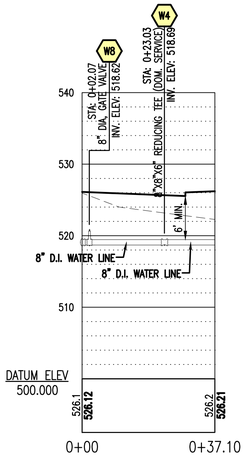
WATER LINE PLAN VIEW
AMMENITY SERVICE

SCALE: HORIZ. 1" = 20'



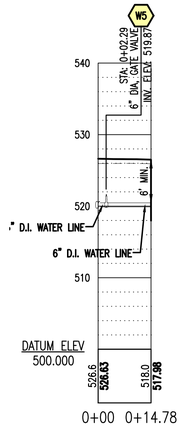
WATER LINE PLAN VIEW
BUILDING 1 SERVICE

SCALE: HORIZ. 1" = 20'



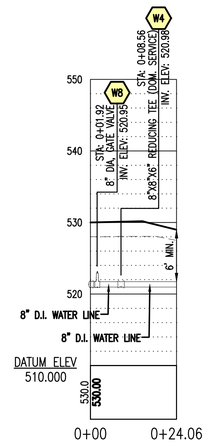
WATER LINE PROFILE VIEW
BUILDING 3 SERVICE

SCALE: HORIZ. 1" = 20'



WATER LINE PROFILE VIEW
AMMENITY SERVICE

SCALE: HORIZ. 1" = 20'



WATER LINE PROFILE VIEW
BUILDING 1 SERVICE

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WATER SCHEDULE

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GRAPHIC SCALE

20 0 10 20 40 80

1 inch = 20 ft.
for sheet size 24" x 36"

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
Nicholas J. Fiore
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR AMENDMENT SUBMISSION	08.12.24

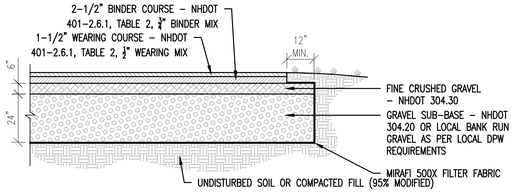
DATE: 10.09.23

SCALE: 1"= 20'

WATER LINE PLAN AND PROFILE (3 OF 3)

C-308

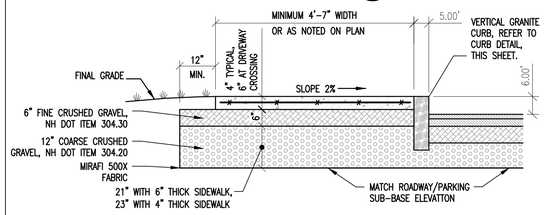
S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-30X WATER PLAN AND PROFILE.DWG -- PLOTTED: 8/8/2024 2:33 PM



NOTES:
1. ALL SUBBASE MATERIALS SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR).
2. ROAD/PARKING LOT PAVEMENT CROSS SECTION BASED ON VTRANS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ITEM 401, TABLE 2.

ASPHALT PAVING (1)

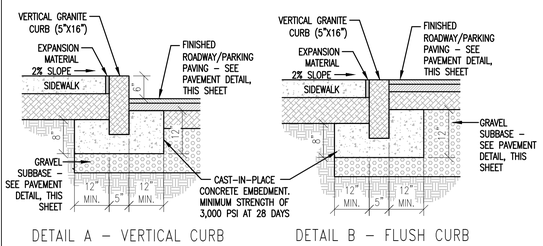
NOT TO SCALE



CONCRETE SIDEWALK NOTES:
1. PLACE A TOOLED JOINT 1/8" WIDE AND AT LEAST 1/3 OF THE DEPTH, TYPICALLY AT INTERVALS MATCHING THE SIDEWALK WIDTH, OR AS NOTED ON PLANS (NOT TO EXCEED 10'-0").
2. PLACE EXPANSION JOINT AS INDICATED ON PLANS, NOT TO EXCEED 20'-0" MAX. EXPANSION JOINTS SHALL BE DOWELED WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (ONE END TO BE GREASED).
3. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUAL.
4. CAST-IN-PLACE CONCRETE TO BE 4000 psi CONCRETE, 5%-7% AIR ENTRAINMENT WITH 6x6-W4.0xW4.0 REINFORCING CENTERED IN SIDEWALK.
5. WHERE SIDEWALK IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, SIDEWALK SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN SIDEWALK TO BE GREASED).
6. WHERE SIDEWALK IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/2" EXPANSION MATERIAL (FULL DEPTH OF SIDEWALK), BETWEEN FEATURE AND SIDEWALK.

CONCRETE SIDEWALK WITH GRANITE CURB (2)

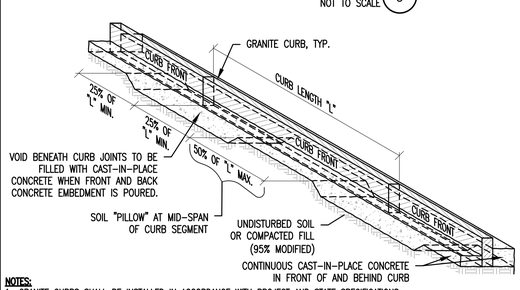
NOT TO SCALE



VERTICAL GRANITE CURB NOTES:
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS.
2. WHERE CURB IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, CURB SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6"oc (PORTION OF DOWEL IN CURB TO BE GREASED).
3. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD OR OTHER HARD FEATURE, BACKSIDE OF CURB SHALL BE SAW CUT. 1/4" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE AND CURB.

GRANITE CURB DETAILS (3)

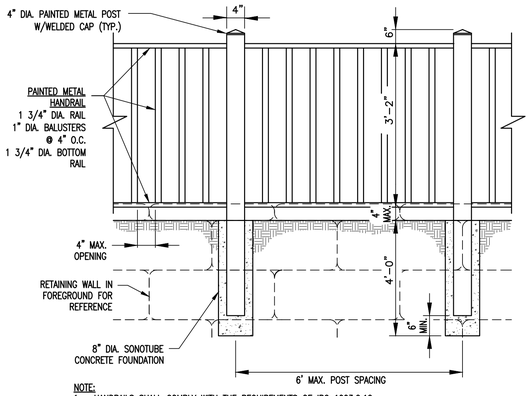
NOT TO SCALE



NOTES:
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS.
2. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD OR OTHER HARD FEATURE, BACKSIDE OF CURB SHALL BE SAW CUT. 1/4" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE (EXCLUDING SIDEWALKS) AND CURB.
3. ROADWAY/PARKING PAVING AND SECTION TO MATCH EXISTING OR AS DIRECTED.

GRANITE CURB EMBEDMENT (4)

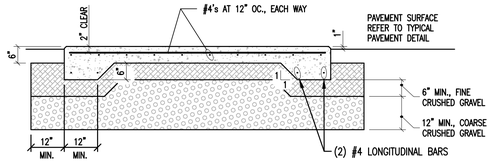
NOT TO SCALE



NOTE:
1. HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF IBC 1003.2.12.
2. HANDRAILS REQUIRED FOR ALL DROPS GREATER THAN 30".
3. COORDINATE WITH OWNER AND ARCHITECT REGARDING EXACT RAIL MATERIALS, STYLES AND COLORS.

FALL PROTECTION RAILING (5)

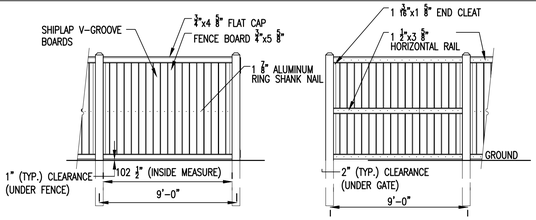
NOT TO SCALE



NOTES:
1. CONCRETE TO BE 4,500psi WITH 5-7% AIR ENTRAINMENT.
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUIVALENT.
3. REFER TO LAYOUT PLAN FOR SIZE AND LOCATION.

CONCRETE DUMPSTER PAD (6)

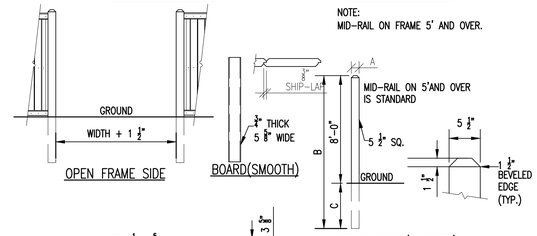
NOT TO SCALE

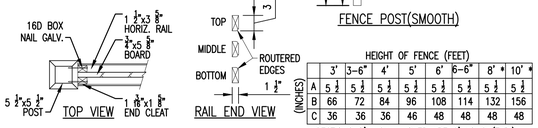


SECTION–FACE SIDE

SECTION–FRAME SIDE

NOTE:
MID-RAIL ON FRAME 5' AND OVER.





HEIGHT OF FENCE (FEET)

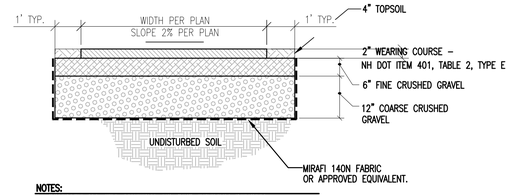
(INCHES)	3'	3'-6"	4'	5'	6'	6'-6"	8' *	10' *
A	5 ½	5 ½	5 ½	5 ½	5 ½	5 ½	5 ½	5 ½
B	66	72	84	96	108	114	132	156
C	36	36	36	46	48	48	48	48

* SECTIONS 8' HIGH & OVER ARE 6' LONG (TYP.)

FENCE DETAIL(SMOOTH)

DUMPSTER ENCLOSURE – CEDAR FENCE (7)

NOT TO SCALE

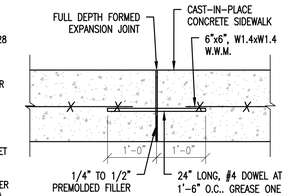


NOTES:
1. COMPACT ALL FILL MATERIAL TO 95% OPTIMUM DENSITY.

BITUMINOUS PAVED PATH (8)

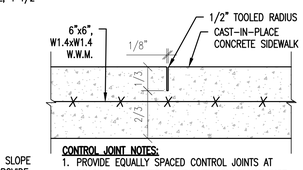
NOT TO SCALE

CONCRETE NOTES:
1. CLASS B CONCRETE SHALL HAVE:
   A. MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   B. AIR ENTRAINMENT OF 5% TO 7% BY VOLUME.
   C. MAXIMUM WATER:CEMENT RATIO= 0.60.
   D. SLUMP: 2-4 INCHES BEFORE ADDITION OF WATER REDUCER, 6-8 INCHES AFTER THE ADDITION OF WATER REDUCER.
2. PLACE NO CONCRETE WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
3. NO CONCRETE SHALL BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
4. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
5. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
6. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE
7. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHN & FINK INDUSTRIAL PRODUCTS.
8. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
9. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   A. CEMENT–TYPE II, ASTM C150.
   B. HYDRATED LIME–TYPE N, ASTM C207.
   C. SAND– ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   D. WATER–CLEAN, SUITABLE FOR DRINKING.
10. MIX(BY VOLUME): 1 PART CEMENT, 1/2 PART LIME, 4 1/2 PARTS SAND.



EXPANSION JOINT NOTES:
1. PROVIDE (1) EXPANSION JOINT EVERY 20'-0" MAX.
2. PROVIDE (2) EXPANSION JOINTS AT EVERY DRIVEWAY INTERSECTION
3. WHERE SIDEWALK IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/2" EXPANSION MATERIAL (FULL DEPTH OF SIDEWALK), BETWEEN FEATURE AND SIDEWALK.
4. WHERE SIDEWALK IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, SIDEWALK SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN SIDEWALK TO BE GREASED).
5. CAULK ALL EXPANSION JOINTS WITH COLOR MATCHING SILICONE CAULKING.

EXPANSION JOINT

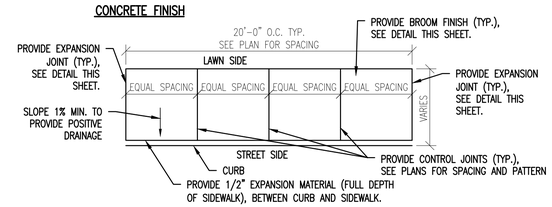


CONTROL JOINT NOTES:
1. PROVIDE EQUALLY SPACED CONTROL JOINTS AT SPACING AND PATTERN INDICATED ON PLANS (NOT TO EXCEED 5'-0").

CONTROL JOINT

SIDEWALK FINISH NOTES:
1. TREAT WITH SILANE-SILOXANE OR EQUAL.

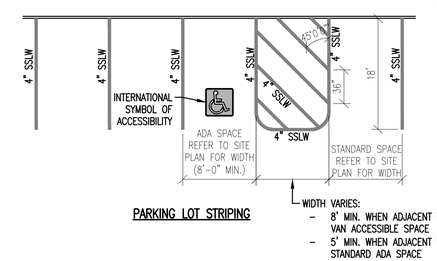
CONCRETE FINISH



JOINT SPACING AND LAYOUT

CONC. SIDEWALK JOINTS, FINISH, AND NOTES (9)

NOT TO SCALE



PARKING LOT STRIPING

PAVEMENT MARKINGS (10)

NOT TO SCALE

SITE PLAN REVIEW

RODE

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Lebanon, NH 03766
603.442.9333 | T

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STATE OF NEW HAMPSHIRE – NICHOLAS J. FIORE – No. 13286 – LICENSED PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR RE-SUBMISSION	12.06.23
2	REVISED PER SPR COMMENTS	01.25.24
3	FSPR AMENDMENT SUBMISSION	08.12.24

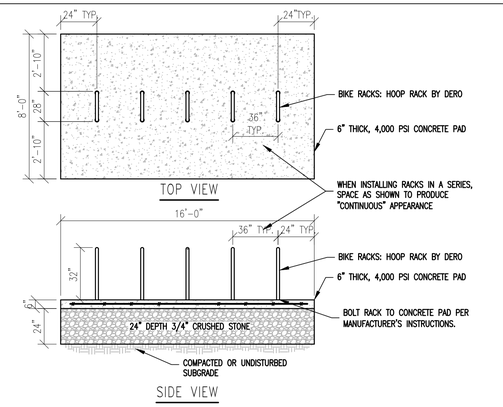
DATE: 08.15.22

SCALE: NO SCALE

SITE DETAILS (1 OF 2)

C-401

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-401X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:22 AM



CONCRETE PAD NOTES:

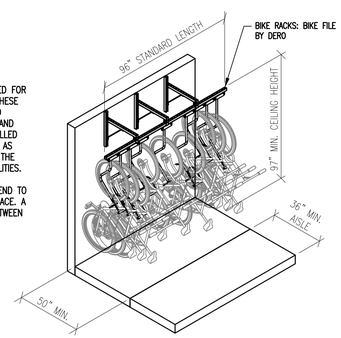
1. PLACE A TOOLED JOINT 1/8" WIDE AND AT LEAST 1/3 OF THE DEPTH, TYPICALLY AT INTERVALS MATCHING THE SLAB WIDTH, OR AS NOTED ON PLANS (NOT TO EXCEED 10'-0").
2. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUAL.
3. CAST-IN-PLACE CONCRETE TO BE 4000 psi CONCRETE, 5%-7% AIR ENTRAINMENT WITH 6x6-W4.0xW4.0 REINFORCING CENTERED IN PAD.
4. WHERE PAD IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, BIKE RACK PAD SHALL BE DOWELED TO DOOR PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN BIKE RACK PAD TO BE GREASED).
5. WHERE PAD IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/2" EXPANSION MATERIAL (FULL DEPTH OF PAD), BETWEEN FEATURE AND SIDEWALK.

EXTERIOR BIKE RACK (1)

NOT TO SCALE

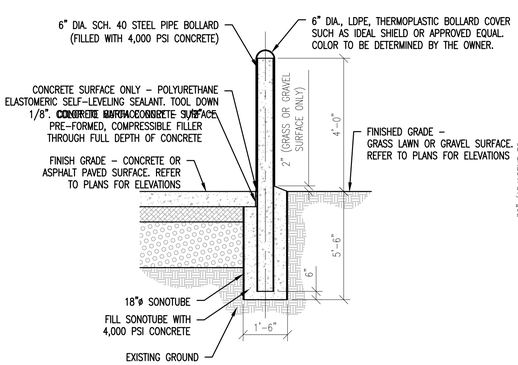
NOTES:

1. THIS DETAIL HAS BEEN PROVIDED FOR REFERENCE PURPOSES ONLY. THESE BIKE RACKS SHALL BE LOCATED WITHIN THE PARKING GARAGES AND SHALL BE PROVIDED AND INSTALLED BY THE BUILDING CONTRACTOR. AS SUCH THEY ARE NOT PART OF THE SITE CONTRACTORS RESPONSIBILITIES.
2. BIKE FILES MAY BE LINED UP END TO END TO FILL THE AVAILABLE SPACE. A 36' AISLE SHOULD BE LEFT BETWEEN THE ENDS OF BIKES IN RACKS FACING ONE ANOTHER.



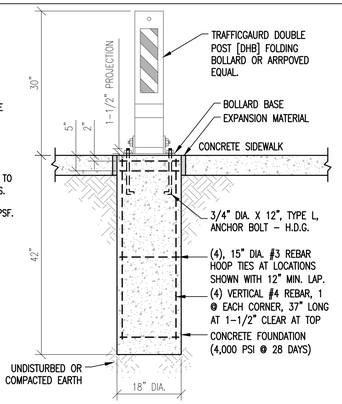
INTERIOR BIKE RACK (2)

NOT TO SCALE



TYPICAL BOLLARD (3)

NOT TO SCALE

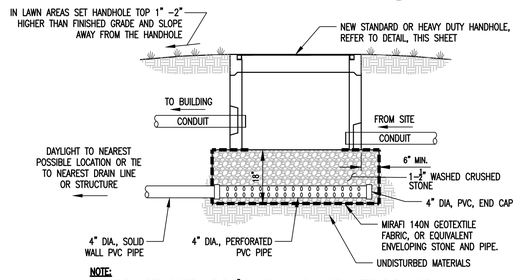


NOTES:

1. FOUNDATION DESIGN DEPICTED HERE IS BASED ON THE "CONCRETE PIER ANCHOR SYSTEM DETAIL DRAWING CPAS12", SHEETS 1 & 2, AS PREPARED BY THE MANUFACTURER "TRAFFICGUARD".
2. THE INSTALLATION SHALL CONFORM TO THE MANUFACTURER'S INSTRUCTIONS.
3. SUBSTRATES SHALL HAVE AN UNCONFINED STRENGTH OF 4,000 PSF. IF SUBSTRATES ARE QUESTIONABLE, CONTACT A STRUCTURAL ENGINEER FOR APPROPRIATE ANCHORAGE EVALUATION AND/OR ANCHORAGE DESIGN.

COLLAPSIBLE BOLLARD (4)

NOT TO SCALE

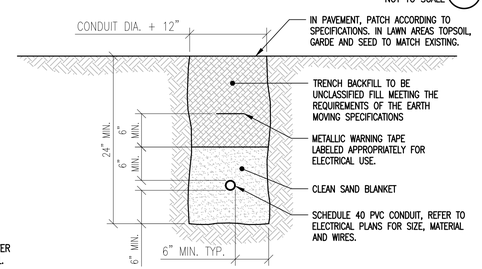


NOTE:

1. AT ENGINEERS DIRECTION THE 4" DIA. DRAIN LINE CAN BE OMITTED IF IT IS NOT FEASIBLE TO DAYLIGHT AND THERE ARE NO NEARBY DRAIN LINES OR STRUCTURES.

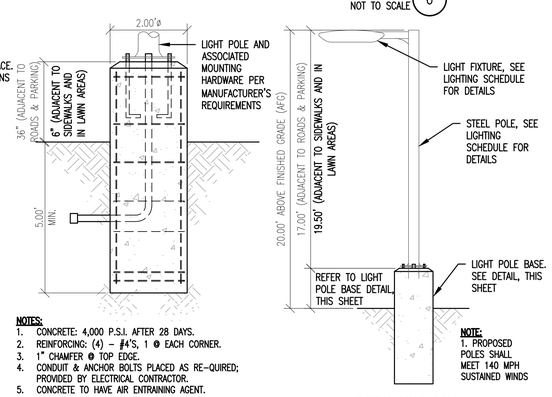
TYPICAL HANDHOLE INSTALLATION (5)

NOT TO SCALE



LIGHTING CONDUIT TRENCH (6)

NOT TO SCALE



NOTES:

1. CONCRETE: 4,000 P.S.I. AFTER 28 DAYS.
2. REINFORCING: (4) - #4'S, 1 @ EACH CORNER.
3. 1" CHAMFER @ TOP EDGE.
4. CONDUIT & ANCHOR BOLTS PLACED AS RE-QUIRED; PROVIDED BY ELECTRICAL CONTRACTOR.
5. CONCRETE TO HAVE AIR ENTRAINING AGENT.

TYPICAL LIGHT POLE BASE

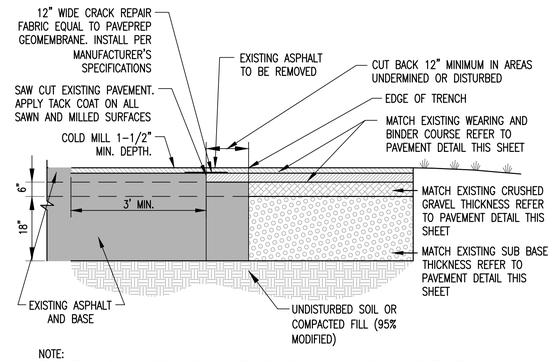
NOTE:

1. PROPOSED POLES SHALL MEET 140 MPH SUSTAINED WINDS

TYPICAL LIGHT POLE

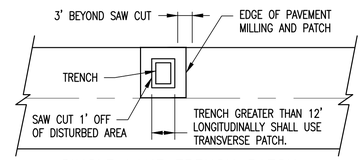
LIGHT POLE (7)

NOT TO SCALE

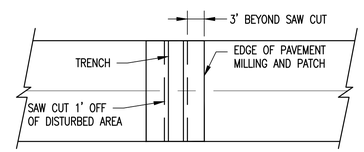


NOTE:
THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT AND BASE WILL BE CONNECTED TO EXISTING PAVEMENT AND BASE.

TRENCH CROSS SECTION DETAIL



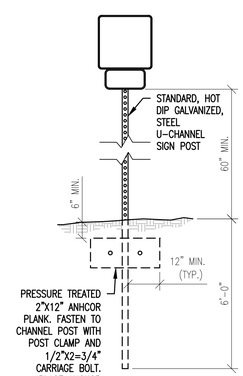
SINGLE LANE TRENCH PATCH



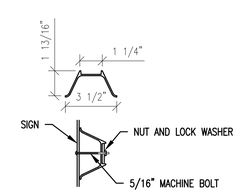
TRANSVERSE TRENCH PATCH

ASPHALT PAVEMENT TRENCH PATCH (8)

NOT TO SCALE



SIGN POST INSTALLATION



POST SECTION AND SIGN MOUNTING

SIGN AND POST (9)

NOT TO SCALE

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
NICHOLAS J. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR RE-SUBMISSION	12.06.23
2	REVISED PER SPR COMMENTS	01.25.24
3	FSPR AMENDMENT SUBMISSION	08.12.24

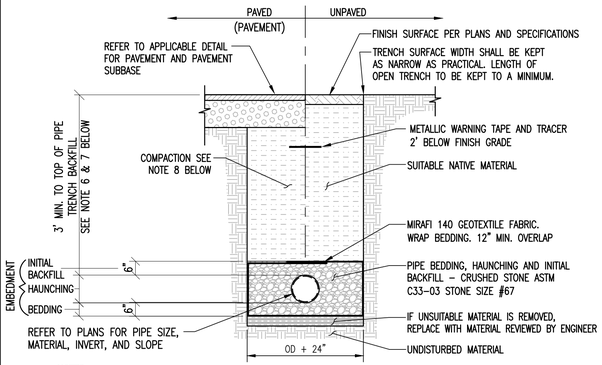
DATE: 08.15.22

SCALE: NO SCALE

SITE DETAILS (2 OF 2)

C-402

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:22 AM

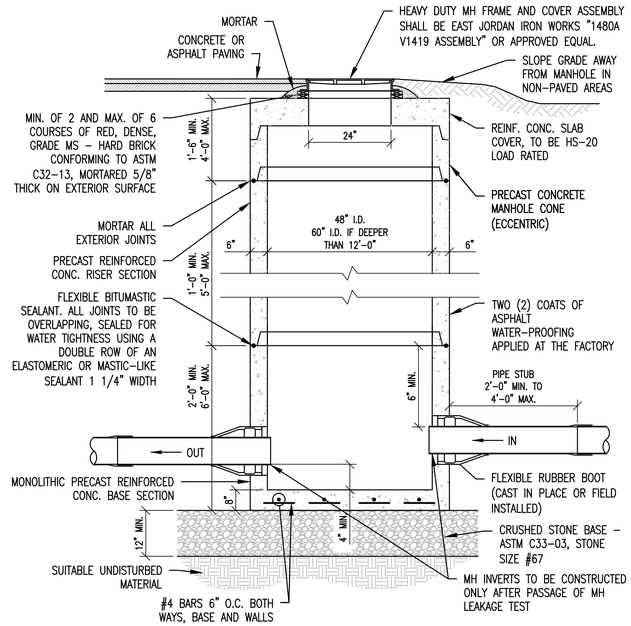


NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
3. PROVIDE 6' OF COVER OVER DRAIN PIPE IN PAVED AREAS AND 5' OF COVER OVER PIPE IN UNPAVED AREAS. OTHERWISE, REFER TO INSULATION OVER SHALLOW DRAIN LINE DETAIL.
4. WHEN APPLICABLE INSTALL PIPE WITH BELL ENDS DOWN SLOPE. PREVENT SEDIMENT FROM ENTERING NEW STORM DRAIN SYSTEM DURING CONSTRUCTION.
5. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
6. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED BY NHDOT 203.2.7, WNV-WQ-704.09(i), AND THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
7. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
8. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

TYPICAL STORM DRAIN TRENCH (1)

NOT TO SCALE

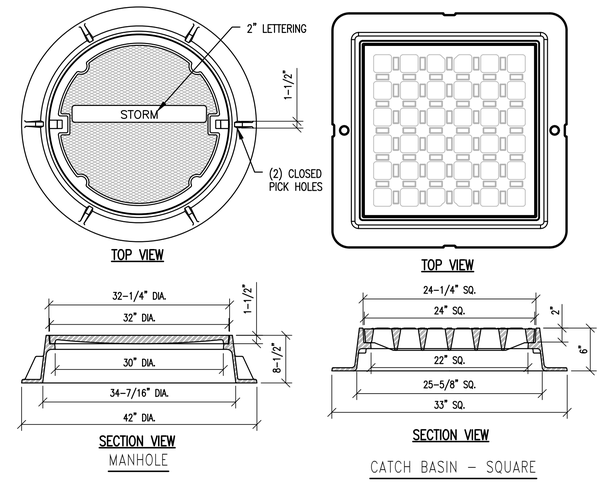


NOTES:

1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
3. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
4. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.

DRAINAGE MANHOLE (FLAT TOP) (3)

NOT TO SCALE

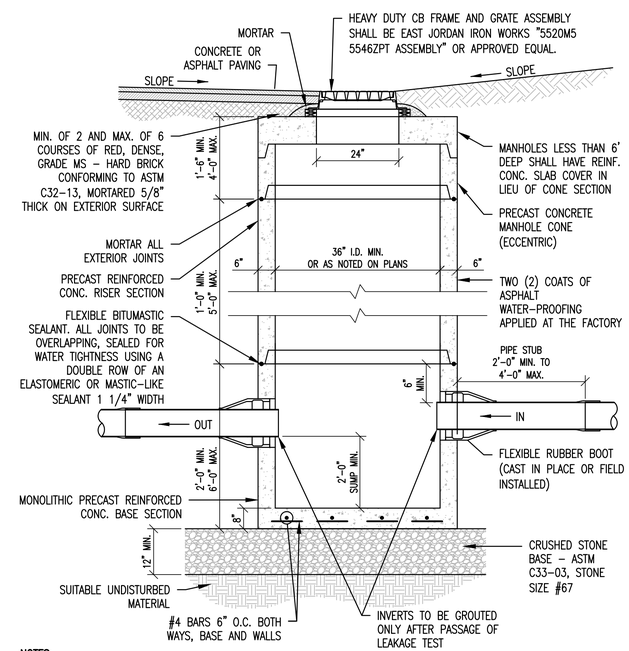


NOTES:

1. ALL DIMENSIONS SHOWN HERE ARE NOMINAL.
2. COVER SHALL BE HEAVY DUTY (H-20) LOAD RATED.
3. CATCH BASIN (SQUARE) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS FRAME 5546Z (PRODUCT NUMBER 00554611 (4 FLANGE) OR 00554613 (3 FLANGE)) AND GRATE 5520M5 (PRODUCT NUMBER 00552060) OR APPROVED EQUAL.
3. CATCH BASIN (ROUND) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "2266Z 1040M3 SET" (PRODUCT NUMBER 00211033205) OR APPROVED EQUAL.
3. CATCH BASIN – (VANED) FRAME AND GRATE ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "5520M8 5521Z ASSEMBLY" (PRODUCT NUMBER 00552081A2) OR APPROVED EQUAL. FRAME AND GRATE VANE DIRECTION SHALL BE "LEFT" OR "RIGHT" DEPENDING ON THE DIRECTION OF FLOW AT EACH BASIN.
4. MANHOLE (MH) FRAME AND COVER ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "1480A V1419 ASSEMBLY" OR APPROVED EQUAL.

STORMWATER MH COVERS AND CB GRATES (5)

NOT TO SCALE

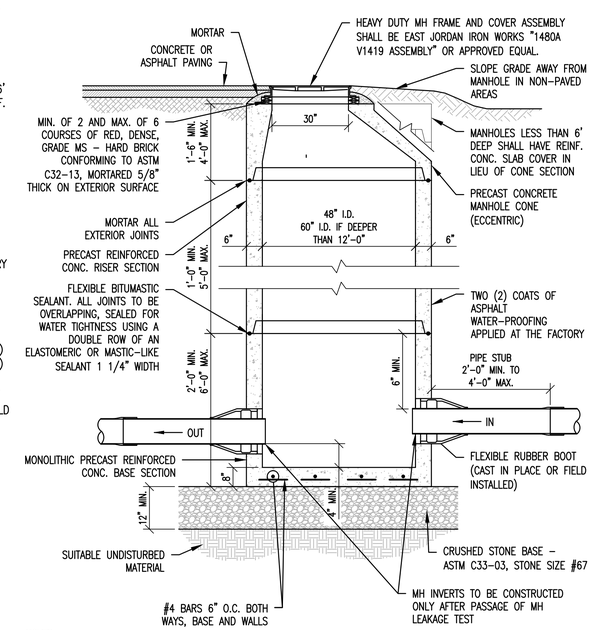


NOTES:

1. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
2. CATCH BASIN AND GRATE SHALL BE DESIGNED FOR H20 LOADING.

CATCH BASIN (2)

NOT TO SCALE

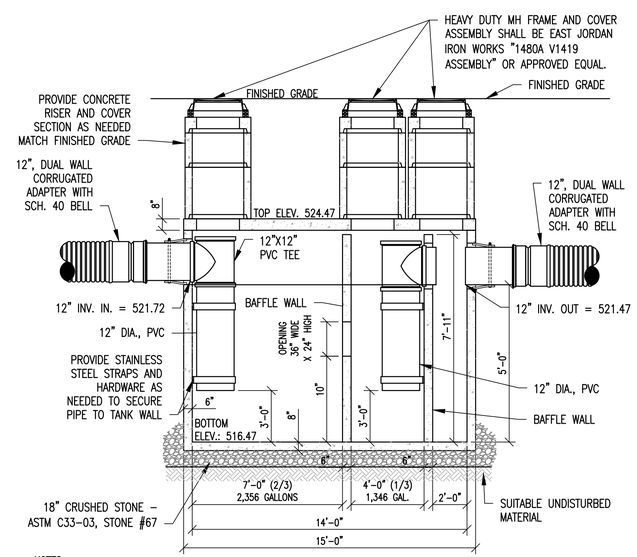


NOTES:

1. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
2. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP WILL BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP WILL BE INSTALLED.
3. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
4. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.

DRAINAGE MANHOLE (CONE SECTION) (4)

NOT TO SCALE



NOTES:

1. TANK SHALL BE 10'X15'X8.7' (3,500 GALLON) PRE-CAST CONCRETE TANK.
2. TANK SHALL BE DESIGNED FOR H-20 LOADING.
3. THE EXTERIOR OF THE PRE-CAST CONCRETE STRUCTURE SHALL RECEIVE TWO COATS OF ASPHALT SEAL COATING AT THE FACTORY.
4. JOINTS BETWEEN THE CONCRETE SECTIONS SHALL BE SEALED BY BUTYL MASTIC (AASHTO M-198).
5. PIPE PENETRATIONS SHALL BE SEALED BY FLEXIBLE WATERTIGHT BOOTS WITH STAINLESS STEEL BANDS.
6. THE WATER QUALITY UNIT AND RISERS SHALL BE FILLED WITH WATER AND SUBJECTED TO A 24 HOUR HYDROSTATIC LEAKAGE TEST. NO LEAKAGE WILL BE ALLOWED DURING THE TEST PERIOD.
7. AN ALTERNATE VACUUM LEAKAGE TEST PRIOR TO BACKFILLING IS ALSO ACCEPTABLE. THE VACUUM TEST WILL REQUIRE THE INSTALLED VAULT AND RISERS TO HOLD A VACUUM PRESSURE OF NEGATIVE 5 INCHES MERCURY FOR 10 MINUTES WITH NO LOSS/GAIN.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A WATERTIGHT STRUCTURE.
9. SHOP DRAWINGS OF THE WATER QUALITY UNIT AND COMPONENTS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

STORMWATER FOREBAY TANK – FB01 (6)

NOT TO SCALE

SITE PLAN REVIEW

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535 Albany Street | 405
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Design Team

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STATE OF NEW HAMPSHIRE
NICHOLAS J. HOPE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR RE-SUBMISSION	12.06.23
2	REVISED PER SPR COMMENTS	01.25.24
3	FSPR AMENDMENT SUBMISSION	08.12.24

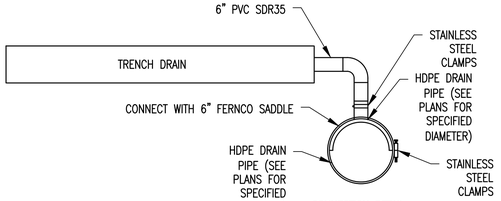
DATE: 08.15.22

SCALE: NO SCALE

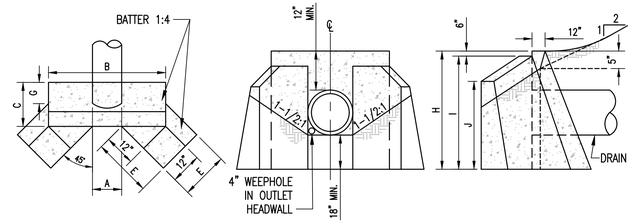
STORMWATER DETAILS (1 OF 5)

C-403

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:23 AM



CONNECTION DETAIL



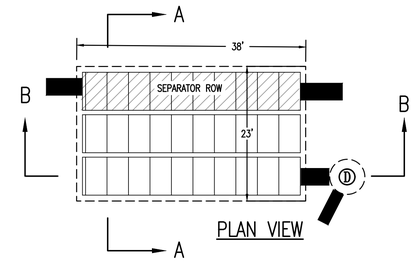
PLAN FRONT ELEVATION SIDE ELEVATION

2:1 SLOPE DIMENSIONS																					
DIA. D INCHES	A		B		C		E		F		G		H		I		J	
in.	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in	ft	in
12	1	2	4	1	1	11	1	2	1	9	0	9	3	6	3	0	3	0
15	1	6	4	4	2	0	1	6	1	9	0	8	3	9	3	3	3	1
18	1	9	4	7	2	0	1	9	1	10	0	8	4	1	3	7	3	3
25	2	3	5	1	2	2	2	4	1	11	0	7	4	6	4	0	3	6
30	2	9	5	7	2	3	2	11	1	11	0	6	5	0	4	6	3	10
36	3	3	6	1	2	5	3	7	2	0	0	6	5	6	5	0	4	1

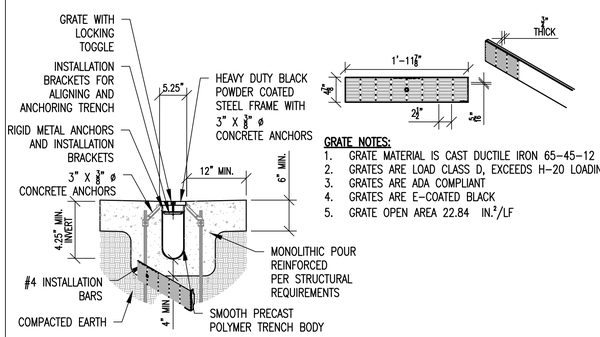
NOTE:
1. CONCRETE SHALL BE CLASS "A" CONCRETE
2. STEEL REINFORCING SHALL BE AS SPECIFIED BY THE MANUFACTURER

PRECAST CONCRETE HEADWALL

NOT TO SCALE (4)



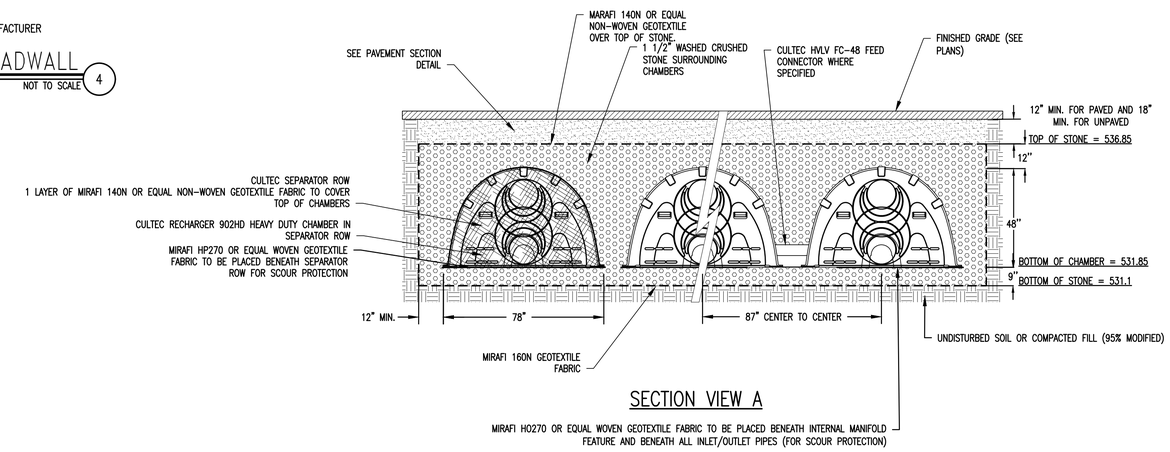
PLAN VIEW



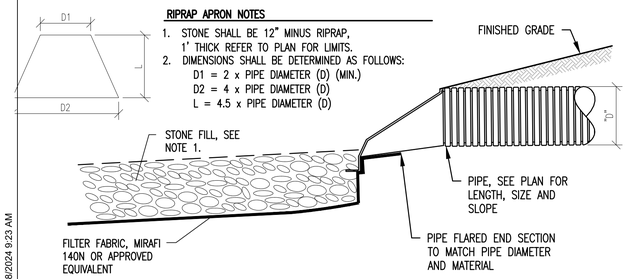
GRATE NOTES:
1. GRATE MATERIAL IS CAST DUCTILE IRON 65-45-12
2. GRATES ARE LOAD CLASS D, EXCEEDS H-20 LOADING
3. GRATES ARE ADA COMPLIANT
4. GRATES ARE E-COATED BLACK
5. GRATE OPEN AREA 22.84 IN.²/LF

TRENCH DRAIN

NOT TO SCALE (1)



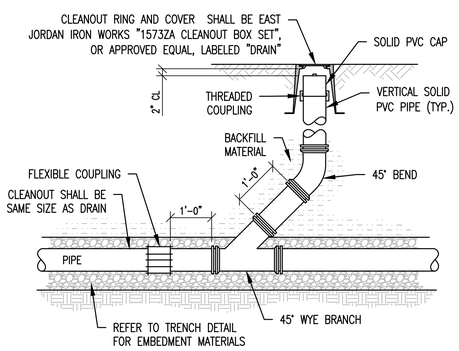
SECTION VIEW A



RIPRAP APRON NOTES
1. STONE SHALL BE 12" MINUS RIPRAP, 1' THICK REFER TO PLAN FOR LIMITS.
2. DIMENSIONS SHALL BE DETERMINED AS FOLLOWS:
   D1 = 2 x PIPE DIAMETER (D) (MIN.)
   D2 = 4 x PIPE DIAMETER (D)
   L = 4.5 x PIPE DIAMETER (D)

FLARED END SECTION W/STONE APRON

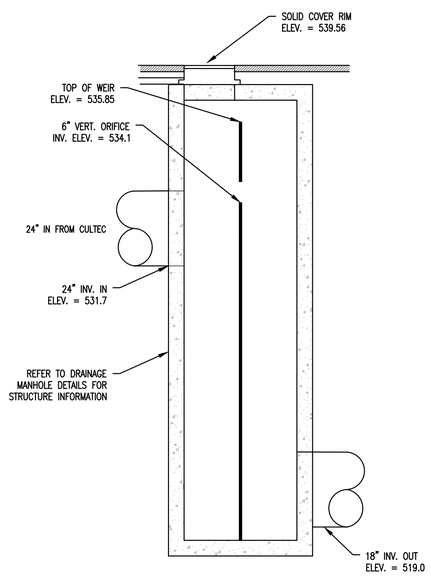
NOT TO SCALE (2)



NOTES:
1. ALL CLEANOUT RISER PIPE AND FITTINGS SHALL BE 4" DIAMETER WHEN THE DRAIN PIPE IS LESS THAN 6" IN DIAMETER AND 6" DIAMETER FOR ALL DRAIN PIPE 6" IN DIAMETER AND GREATER.
2. CLEANOUTS SHALL BE PROVIDED AT EACH HORIZONTAL CHANGE IN DIRECTION OF THE DRAIN PIPE GREATER THAN 45 DEGREES AND AS SHOWN ON THE PLANS.
3. CLEANOUT RISER ASSEMBLY PIPE MATERIAL SHALL MATCH DRAIN PIPE MATERIAL.

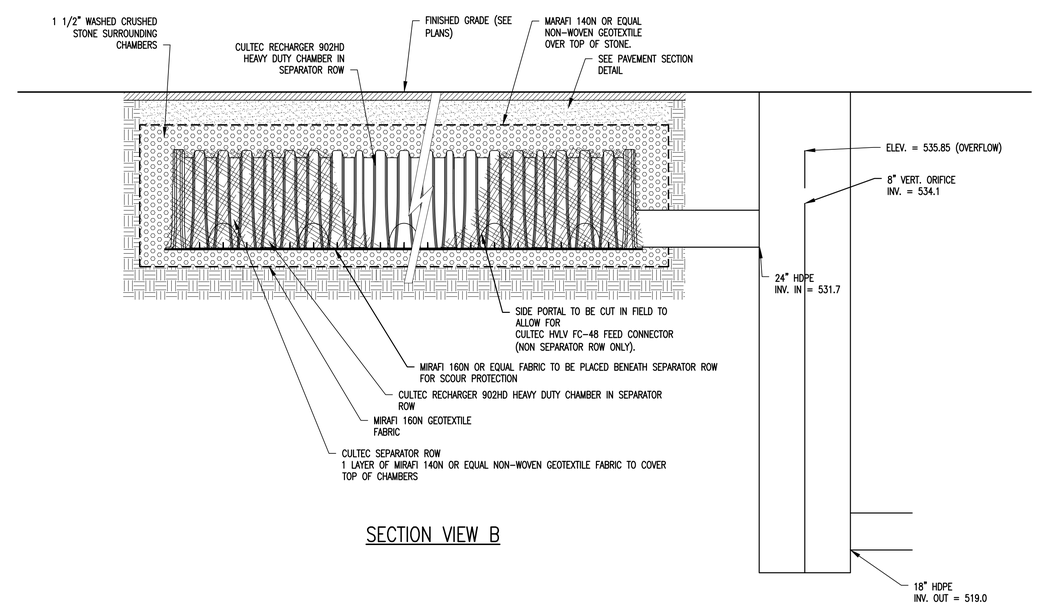
DRAIN CLEANOUT

NOT TO SCALE (3)



OUTLET STRUCTURE – OS5

NOT TO SCALE (5)



SECTION VIEW B

CULTEC STORAGE CHAMBER SYSTEM – SC02

NOT TO SCALE (6)

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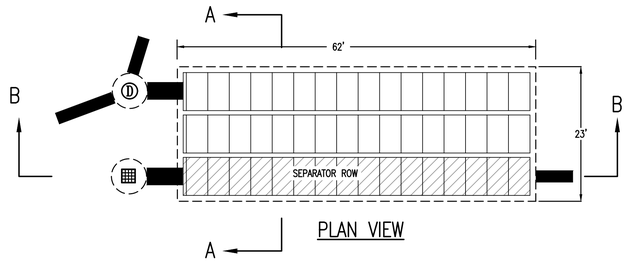
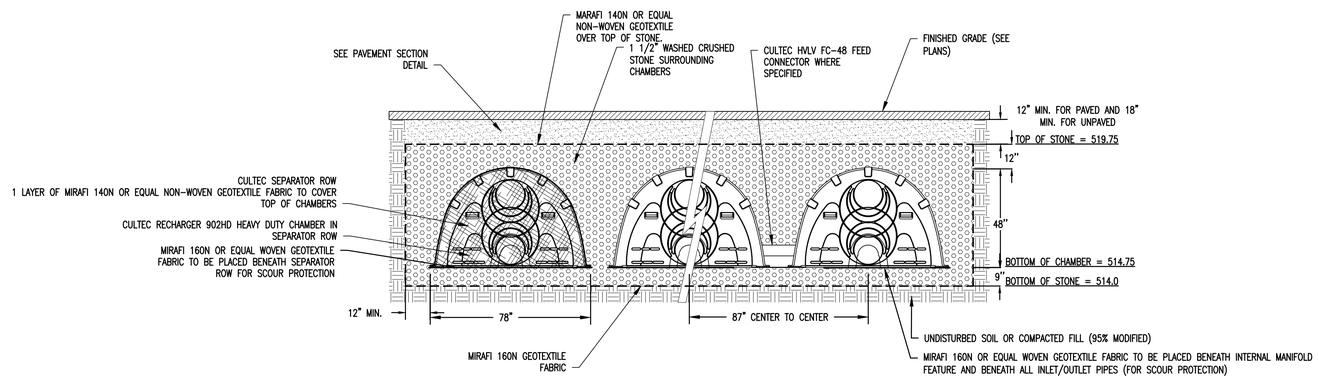
STORMWATER DETAILS (2 OF 5)

C-404

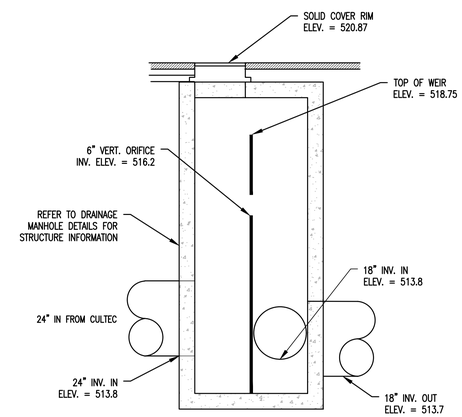
S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:23 AM



PLAN VIEW

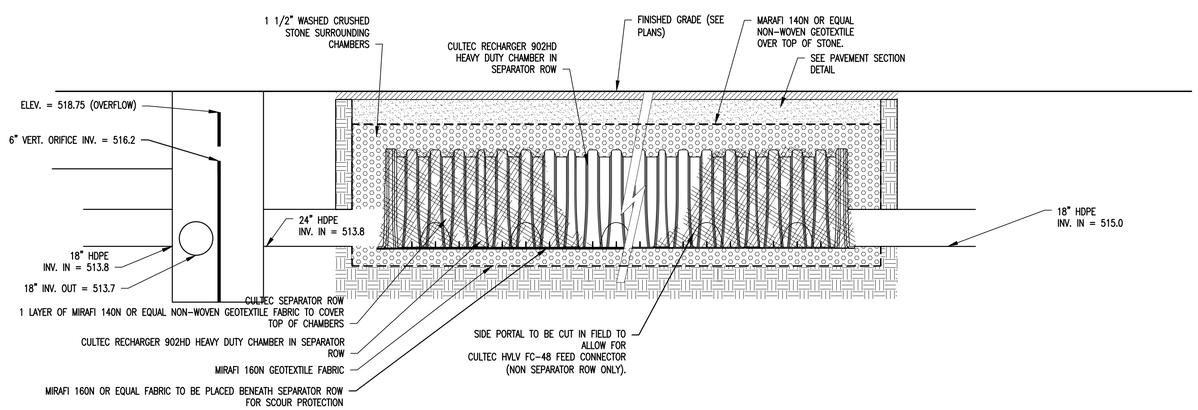


SECTION VIEW A



OUTLET STRUCTURE – OS4

NOT TO SCALE (2)



SECTION VIEW B

CULTEC STORAGE CHAMBER SYSTEM – SC01

NOT TO SCALE (1)

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LEBANON, NH

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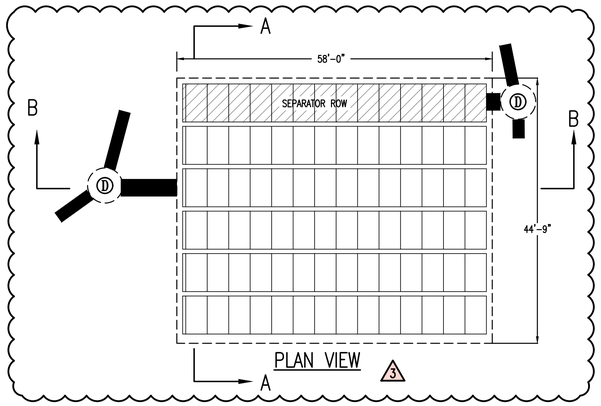
SCALE: NO SCALE

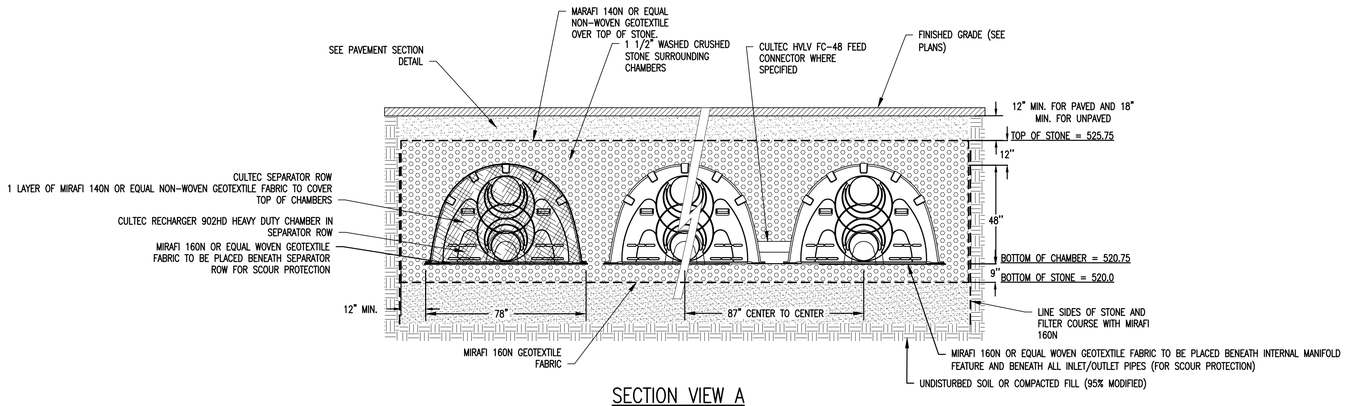
STORMWATER DETAILS (3 OF 5)

C-405

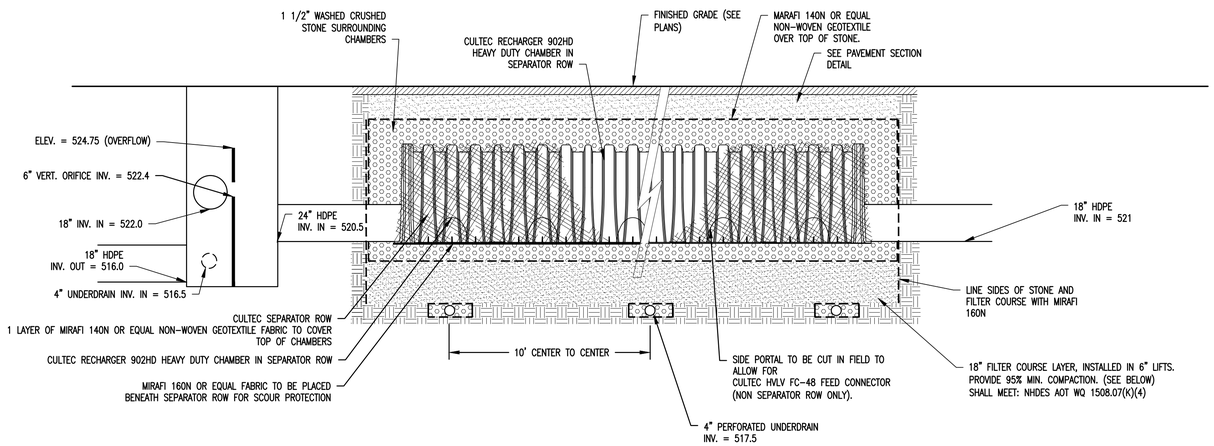
S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:23 AM



PLAN VIEW



SECTION VIEW A

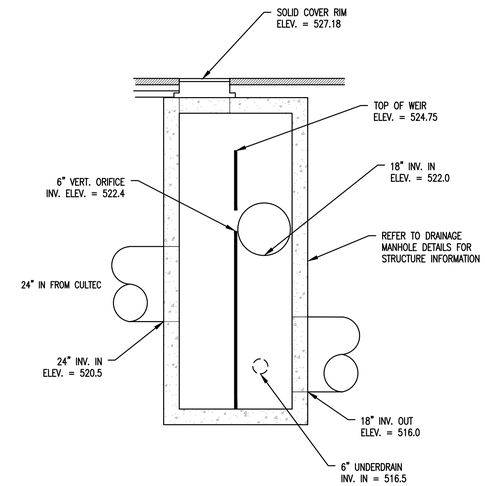


SECTION VIEW B

FILTER COURSE PER NHDES AOT: WQ 1508.07(K)(4)			
	PERCENT OF MOCTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
HORTICULTURAL SPHAGNUM PEAT, OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	5

CULTEC STORAGE CHAMBER SYSTEM – SC03

NOT TO SCALE (1)



OUTLET STRUCTURE – OS1

NOT TO SCALE (2)

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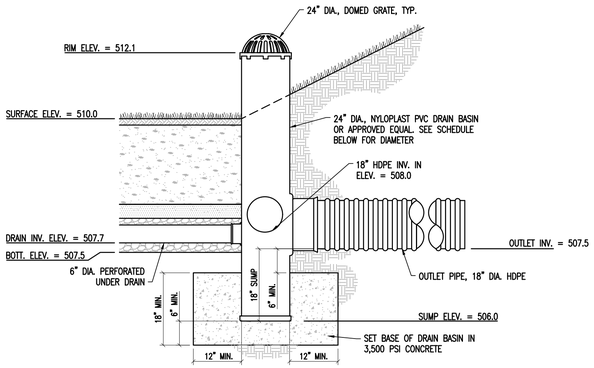
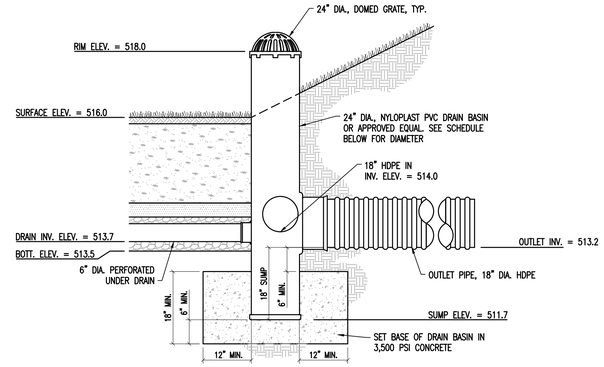
STORMWATER DETAILS (4 OF 5)

C-406



OUTLET STRUCTURE – OS2

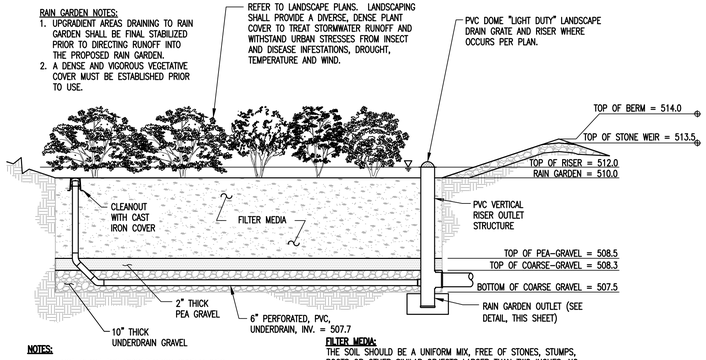
NOT TO SCALE (1)



OUTLET STRUCTURE – OS3

NOT TO SCALE (3)

RAIN GARDEN NOTES:
1. UPGRADIENT AREAS DRAINING TO RAIN GARDEN SHALL BE FINAL STABILIZED PRIOR TO DIRECTING RUNOFF INTO THE PROPOSED RAIN GARDEN.
2. A DENSE AND VIGOROUS VEGETATIVE COVER MUST BE ESTABLISHED PRIOR TO USE.



NOTES:

1. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
3. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

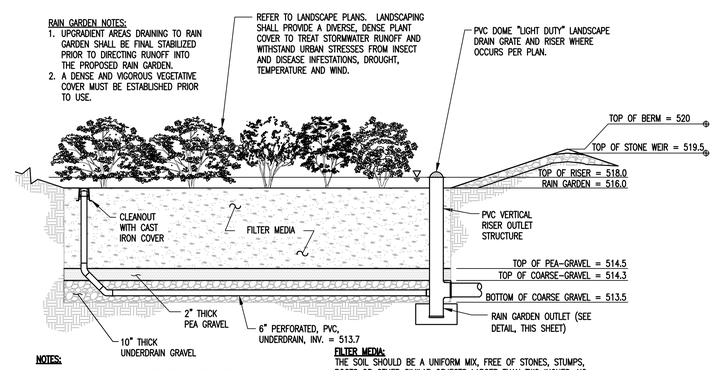
FILTER MEDIA:
THE SOIL SHOULD BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHOULD BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE FILTER MEDIA SHOULD BE FREE OF NOXIOUS WEEDS.
THE FILTER MEDIA SHOULD BE TESTED AND SHOULD MEET THE FOLLOWING CRITERIA:
PH RANGE 5.2 – 7.0
ORGANIC MATTER 1.5 – 4%
MAGNESIUM 35 LB./AC
PHOSPHORUS P205 75 LB./AC
POTASSIUM K20 85 LB./AC
SOLUBLE SALTS NOT TO EXCEED 500 PPM

MATERIAL SPECIFICATIONS					
PARAMETER	SPECIFICATION	SIZE			NOTES
FILTER MEDIA [15" DEEP]	COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL SIEVE NO.	% PASSING	
	BARK MULCH	20% TO 30%	200	<5	BARK MULCH SHALL BE MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED.
	LOAMY COARSE SAND	70% TO 80%	10 20 60 200	85 to 100 70 to 100 15 to 40 8 to 15	USDA SOIL TYPE FOR LOAMY COARSE SAND
MULCH [3" DEEP]	SHREDDED HARDWOOD				AGED 6 MONTHS, MINIMUM
PEA GRAVEL	ASTM C33-03		NO. 8 (3/8" TO #8)		
COARSE GRAVEL	ASTM C33-03		NO. 6 (3/4" TO 3/8")		

RAIN GARDEN – RG02

NOT TO SCALE (2)

RAIN GARDEN NOTES:
1. UPGRADIENT AREAS DRAINING TO RAIN GARDEN SHALL BE FINAL STABILIZED PRIOR TO DIRECTING RUNOFF INTO THE PROPOSED RAIN GARDEN.
2. A DENSE AND VIGOROUS VEGETATIVE COVER MUST BE ESTABLISHED PRIOR TO USE.



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FILTER MEDIA:
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PHOSPHORUS P205 75 LB./AC
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SOLUBLE SALTS NOT TO EXCEED 500 PPM

MATERIAL SPECIFICATIONS					
PARAMETER	SPECIFICATION	SIZE			NOTES
FILTER MEDIA [15" DEEP]	COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL SIEVE NO.	% PASSING	
	BARK MULCH	20% TO 30%	200	<5	BARK MULCH SHALL BE MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED.
	LOAMY COARSE SAND	70% TO 80%	10 20 60 200	85 to 100 70 to 100 15 to 40 8 to 15	USDA SOIL TYPE FOR LOAMY COARSE SAND
MULCH [3" DEEP]	SHREDDED HARDWOOD				AGED 6 MONTHS, MINIMUM
PEA GRAVEL	ASTM C33-03		NO. 8 (3/8" TO #8)		
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RAIN GARDEN – RG01

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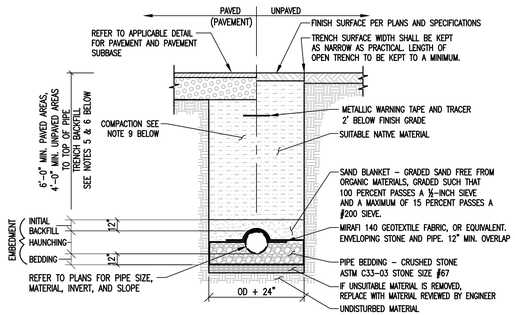
STORMWATER DETAILS (5 OF 5)

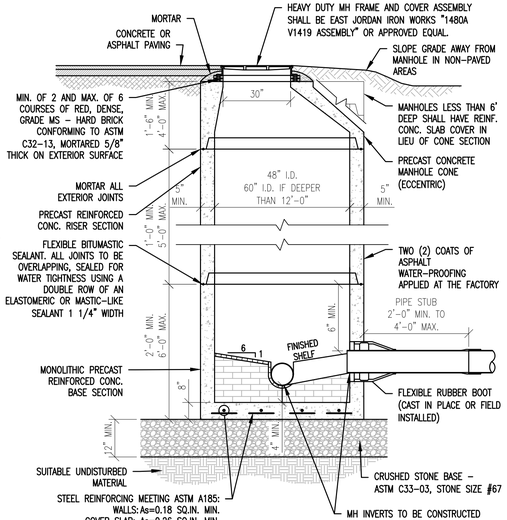
C-407

S:\PROJECTS\0-20222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:24 AM



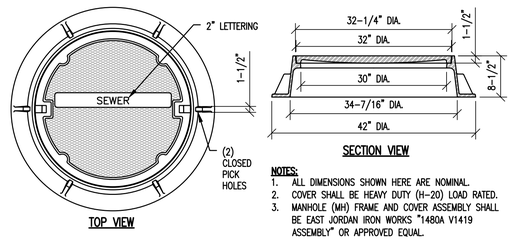
NOTES:
1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
3. FOR SEWER LINES THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 6'-0" IN PAVED AREAS AND 4'-0" IN UNPAVED AREAS. SHALLOWER DEPTHS REQUIRE APPROVAL FROM THE ENGINEER. REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
4. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
5. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED IN THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
6. WHEN APPLICABLE INSTALL PIPE WITH BELL ENDS DOWN SLOPE. PREVENT SEDIMENT FROM ENTERING NEW SEWER SYSTEM DURING CONSTRUCTION.
7. ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER.
8. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
9. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

GRAVITY SEWER TRENCH DETAIL (1)
NOT TO SCALE



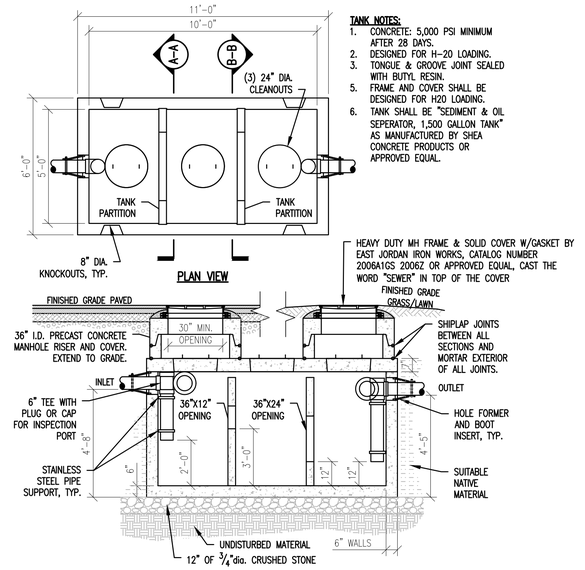
NOTES:
1. INVERTS OF MANHOLES SHALL BE FORMED WITH GRADE SS - HARD BRICK CONFORMING TO ASTM C32-13.
2. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
3. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT, THEN A FLAT TOP MAY BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT., THEN AN ECCENTRIC CONICAL TOP SHALL BE INSTALLED.
4. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF THE INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
5. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
6. MANHOLE SHALL CONFORM TO ASTM C478 SPECIFICATIONS FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
7. CONCRETE FC=4,000 PSI @ 28 DAYS MINIMUM
8. BASE SECTION SHALL BE A ONE POUR MONOLITHIC SECTION

SEWER MANHOLE DETAIL (4)
NOT TO SCALE

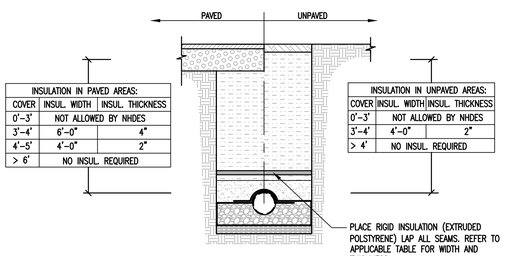


NOTES:
1. ALL DIMENSIONS SHOWN HERE ARE NOMINAL.
2. COVER SHALL BE HEAVY DUTY (H-20) LOAD RATED.
3. MANHOLE (MH) FRAME AND COVER ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "1480A V1419 ASSEMBLY" OR APPROVED EQUAL.

SEWER MANHOLE FRAME & COVER (6)
NOT TO SCALE



TANK NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR H-20 LOADING.
3. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
5. FRAME AND COVER SHALL BE DESIGNED FOR H20 LOADING.
6. TANK SHALL BE "SEDIMENT & OIL SEPERATOR, 1,500 GALLON TANK" AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUAL.

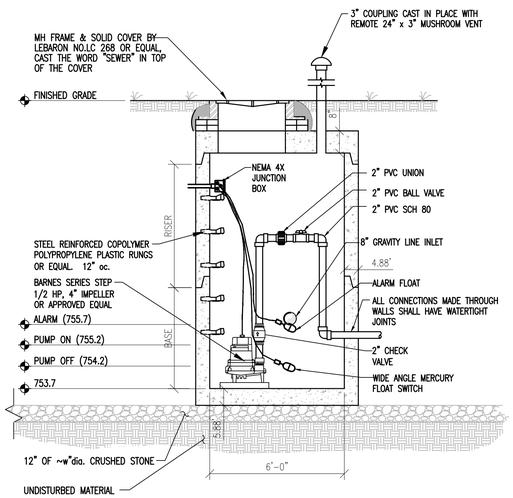


INSULATION IN PAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	6'-0"	4"
4'-5'	4'-0"	2"
> 6'	NO INSUL. REQUIRED	

INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	4'-0"	2"
> 4'	NO INSUL. REQUIRED	

NOTES:
1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. NOTIFY DEPARTMENT OF PUBLIC WORKS TO REVIEW INSTALLATION AND BACKFILL.
3. ALL SHALLOW SEWER INSTALLATIONS MUST BE APPROVED BY ENGINEER.
4. THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 6'-0" IN PAVED AREAS AND 4'-0" IN UNPAVED AREAS. SHALLOWER DEPTHS REQUIRE APPROVAL FROM THE ENGINEER. REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.

SHALLOW SEWER LINE INSULATION DETAIL (2)
NOT TO SCALE



ELEVATION VIEW PUMP STATION

PUMP STATION NOTES:

1. WATER PROOF, SEAMLESS PUMP STATION SUPPLIED BY CAMP PRECAST, OR EQUIVALENT.

2. CONTROL PANEL TO BE LOCATED IN THE PROPOSED BUILDING. AND SHALL CONTAIN:
   A. RUN LIGHTS
   B. MANUAL ON/OFF AUTOMATIC CONTROL
   C. ALARM SILENCE BUTTON
   D. AUDIO AND VISUAL ALARM TO BE MOUNTED ON THE CONTROL PANEL BOX.
   E. PUMP TIMER AND COUNTER

3. SPARE PARTS TO BE SUPPLIED TO INCLUDE:
   A. EXTRA FLOAT SWITCH
   B. TWO EXTRA RESET BLOCKS IN CONTROL PANEL.
   C. TWO ORIGINAL SETS OF MANUALS FOR BOTH THE PUMPS AND CONTROL PANELS.

4. ALL ELECTRICAL COMPONENTS TO BE UNDERWRITERS LABORATORY APPROVED, INSTALLED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

5. PUMP TO BE BARNES SERIES STEP, 1/2 HP, SINGLE PHASE SUBMERSIBLE PUMP WITH 4.00" IMPELLER.

6. ALL PIPE AND FITTINGS IN PUMP STATION SHALL BE FLANGED SCHEDULE 80 PVC.

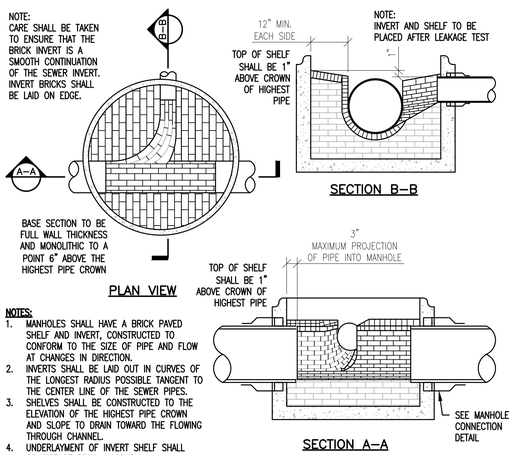
7. TANK SHALL BE INSTALLED LEVEL ON A COMPACTED 12" GRAVEL BASE.

8. STEPS TO BE COPOLYMER POLYPROPYLENE PLASTIC WITH ~6" GRADE 60 REBAR CONTINUOUS THROUGHOUT.

SIMPLEX PUMP STATION (ROUND) (7)
NOT TO SCALE

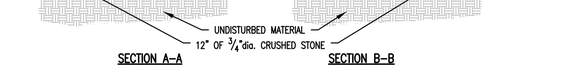
NOTES:
1. CORE HOLE SHALL BE SMOOTH, SYMMETRICAL, AND APPROPRIATELY SIZED FOR SEWER PIPE INSTALLATION.
2. WHEN APPLICABLE CONTRACTOR SHALL RECONSTRUCT EXISTING SHELF IN MANHOLES TO PROVIDE POSITIVE FLOW TO INVERT OUT.

MANHOLE CONNECTION (3)
NOT TO SCALE



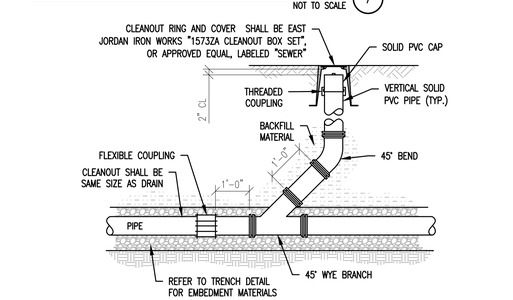
NOTES:
1. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION.
2. INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES.
3. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.
4. UNDERLAYMENT OF INVERT SHELF SHALL CONSIST OF BRICK MASONRY.

SEWER MANHOLE INVERT AND SHELF DETAIL (5)
NOT TO SCALE

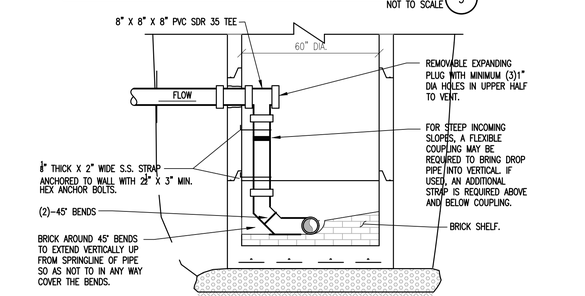


GENERAL NOTES:
1. ITEMS OF WORK SHALL INCLUDE ALL NECESSARY MATERIALS AND THEIR INSTALLATION AS REQUIRED TO OPERATE THE GRIT/OIL SEPARATOR.
2. THE PRECAST STRUCTURE SHALL BE "SEDIMENT & OIL SEPERATOR, 1,500 GALLON TANK" AS MANUFACTURED BY SHEA CONCRETE PRODUCTS OR APPROVED EQUAL. THE PRE-CAST CONCRETE STRUCTURE AND RISERS SHALL BE CAPABLE OF WITHSTANDING H-20 LOADING AS CONFIGURED. THE EXTERIOR OF THE PRE-CAST CONCRETE STRUCTURE SHALL RECEIVE TWO COATS OF ASPHALT SEAL COATING AT THE FACTORY.
3. JOINTS BETWEEN THE CONCRETE SECTIONS SHALL BE SEALED BY BUTYL MASTIC (AASHTO M-198).
4. PIPE PENETRATIONS SHALL BE SEALED BY FLEXIBLE WATERTIGHT BOOTS WITH STAINLESS STEEL BANDS.
5. THE OIL-GRIT SEPARATOR AND RISERS SHALL BE FILLED WITH WATER AND SUBJECTED TO A 24 HOUR HYDROSTATIC LEAKAGE TEST. NO LEAKAGE WILL BE ALLOWED DURING THE TEST PERIOD.
6. AN ALTERNATE VACUUM LEAKAGE TEST PRIOR TO BACKFILLING IS ALSO ACCEPTABLE. THE VACUUM TEST WILL REQUIRE THE INSTALLED VAULT AND RISERS TO HOLD A VACUUM PRESSURE OF NEGATIVE 5 INCHES MERCURY FOR 10 MINUTES WITH NO LOSS/GAIN.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A WATERTIGHT STRUCTURE.
8. VENT OIL-GRIT SEPARATOR IN CONFORMANCE WITH VERMONT AND INTERNATIONAL PLUMBING CODES.
9. SHOP DRAWINGS OF THE OIL-GRIT SEPARATOR AND COMPONENTS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
9. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

1,500 GALLON OIL-GRIT SEPARATOR (9)
NOT TO SCALE



SEWER CLEANOUT DETAIL (8)
NOT TO SCALE



DROP MANHOLE NOTES:
1. DROP PIPE TO BE SAME DIAMETER AS SEWER DISCHARGING INTO MANHOLE.
2. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
3. REFER TO SANITARY MANHOLE DETAIL ON THIS SHEET FOR INFORMATION ON MANHOLE DESIGN AND INSTALLATION.
4. COORDINATE DROP MANHOLE SPECIFICATIONS AND INSTALLATION REQUIREMENTS WITH THE TOWN OF MILTON WATER AND WASTEWATER SUPERINTENDENT.

SEWER MANHOLE - INTERIOR DROP (10)
NOT TO SCALE

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG -- PLOTTED: 8/8/2024 9:24 AM

SITE PLAN REVIEW

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EV PROJECT: 22122

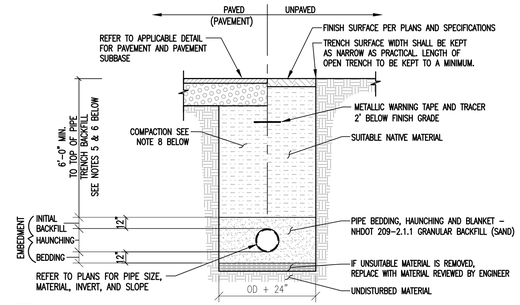
No.	Description	Date
1	REVISED PER SPR COMMENTS	01.25.24
2	FSPR AMENDMENT SUBMISSION	08.12.24

DATE: 08.15.22

SCALE: NO SCALE

SANITARY SEWER DETAILS

C-408

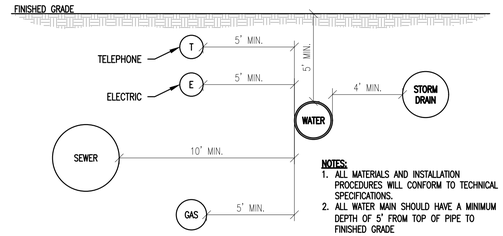


NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. PROVIDE 6'-0" MINIMUM COVER OVER WATER PIPE. OTHERWISE, REFER TO INSULATION OVER SHALLOW WATER LINE DETAIL.
4. INSTALL WATER PIPE IN ACCORDANCE WITH AWWA STANDARD C600.
5. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
6. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED IN THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
7. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
8. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

WATER TRENCH (1)

NOT TO SCALE

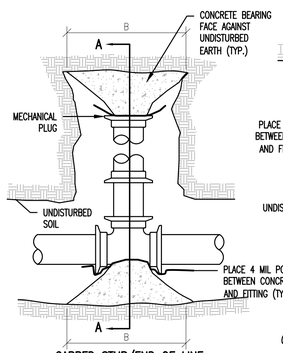


NOTES:

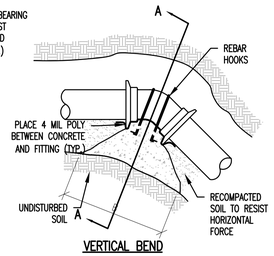
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISHED GRADE

WATER MAIN UTILITY SEPARATIONS (3)

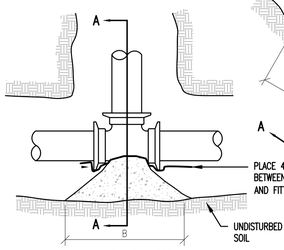
NOT TO SCALE



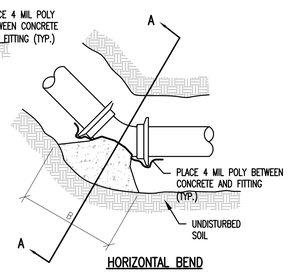
CAPPED STUB/END OF LINE



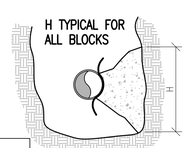
VERTICAL BEND



HORIZONTAL TEE



HORIZONTAL BEND



SECTION A–A

NOTES:

1. PERFORM HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
2. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
3. CONCRETE SHALL BE CLASS B.
4. ON ALL THRUST BLOCKS, B SHALL BE THE GREATER DIMENSION, USE 1.5:1 TO 2:1 FOR B:H.

TABLE 2 – THRUST DEVELOPED PER 100psi PRESSURE (lbs force)

PIPE DIAMETER IN.	VALVES AND DEAD ENDS, TEES	90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS
4	1810	2560	1390	635	320
6	3740	5290	2860	1370	690
8	6430	9100	4920	2320	1170
10	9680	13680	7410	3610	1820
12	13690	19350	10470	5080	2550
14	18380	25990	14100	6100	3080
16	23780	33630	18280	7960	4020

TABLE 1 – BEARING STRENGTH OF UNDISTURBED SOIL

SOIL TYPE	BEARING STRENGTH
PEAT, ETC.	0 lb/ft²
SOFT CLAY	500 lb/ft²
SAND	1000 lb/ft²
SAND AND GRAVEL	1500 lb/ft²
SAND AND GRAVEL WITH CLAY	2000 lb/ft²
SAND AND GRAVEL CEMENTED WITH CLAY	4000 lb/ft²
HARD PAN	5000 lb/ft²

DETERMINING MINIMUM BEARING FACE AREA:

THE AREA (ft^2) SHALL BE CALCULATED BY DETERMINING THE TOTAL THRUST GENERATED AT THE FITTING.

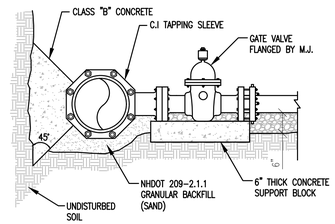
DIVIDE THE THRUST DEVELOPED (lbs force) (FROM TABLE 2) BY THE BEARING STRENGTH OF THE SOIL (FROM TABLE 1). THE RESULT IS THE AREA OF THE SOIL REQUIRED TO RESIST THE THRUST (A).

THE AREA CALCULATED WILL BE FOR THE AREA OF CONCRETE UP AGAINST THE TRENCH WALL (i.e. THE BACK SIDE OF THE BLOCK). USE THE TEST PRESSURE TO DETERMINE THE TOTAL THRUST.

$$\text{AREA} = \frac{\text{THRUST DEVELOPED (lbs force)}}{\text{BEARING STRENGTH OF SOIL}}$$

TYPICAL BEARING THRUST BLOCK (2)

NOT TO SCALE



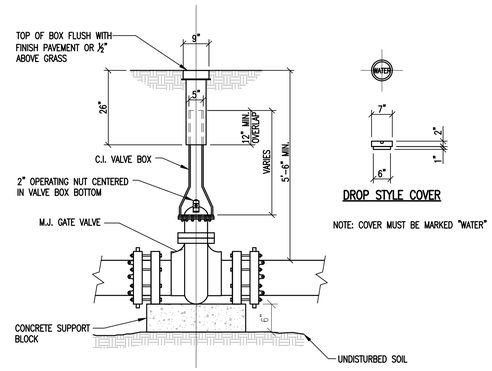
SECTION VIEW

NOTES:

1. AREA OF THRUST BLOCK BEARING AGAINST UNDISTURBED SOIL SHALL BE THE SAME AS FOR 1/4" BEND (90°) BEND.
2. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINT ON M.J. END.
3. SEE TYPICAL GATE VALVE DETAIL FOR VALVE BOX INFORMATION.
4. SEE TYPICAL WATER TRENCH DETAIL FOR PIPE BEDDING REQUIREMENTS.

TAPPING SLEEVE AND VALVE (4)

NOT TO SCALE



DROP STYLE COVER

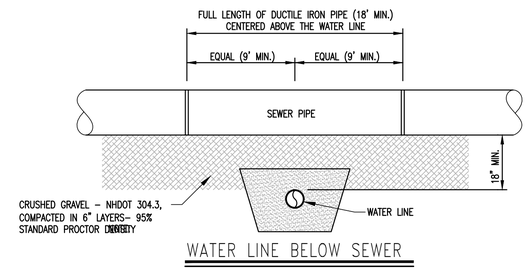
NOTE: COVER MUST BE MARKED "WATER"

NOTES:

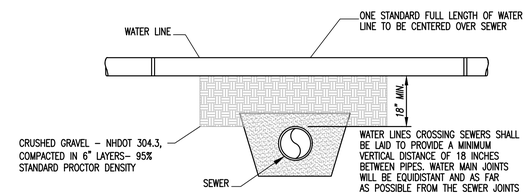
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINT ON ALL M.J. GATE VALVES.
3. SEE TYPICAL WATER TRENCH DETAIL FOR PIPE BEDDING REQUIREMENTS.
4. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN 6'–0 , A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 6 FEET.

GATE VALVE (6)

NOT TO SCALE



WATER LINE BELOW SEWER



WATER LINE ABOVE SEWER

(PREFERED CROSSING ORIENTATION)

PROTECTION OF WATER SUPPLIES

a. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN ANY CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.

b. NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV–WS 300 FOR ANY PUBLIC WATER SUPPLY WELL OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.

c. SEWERS SHALL BE LOCATED AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.

d. A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (b) or (c) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV–Wq 704.06.

e. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:

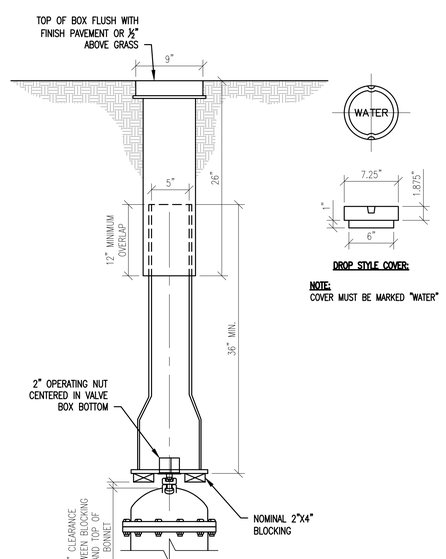
1.) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND

2.) SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 9 FEET HORIZONTALLY FROM THE WATER MAIN.

f. WATER–SEWER SEPARATION SHALL COMPLY WITH ENV–Wq 704.19 OR A WAIVER MUST BE REQUESTED FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.

TYPICAL SEWER/WATER SEPARATION DETAILS (8)

NOT TO SCALE



DROP STYLE COVER:

NOTE: COVER MUST BE MARKED "WATER"

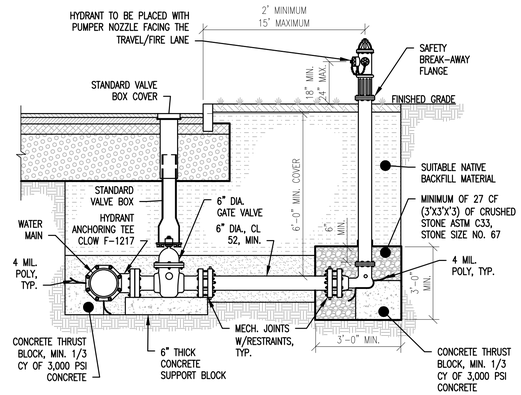
BOTTOM DETAIL:

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISHED GRADE

TYPICAL VALVE BOX (5)

NOT TO SCALE



NOTES:

1. HYDRANT DRAIN SHALL BE PLUGGED.
2. ACCEPTABLE HYDRANT MAKE AND MODEL: MUELLER SUPER CENTURION 250 MODEL A–423 (NO HYDRANT DRAIN).
3. HYDRANT SHALL MEET OR EXCEED AWWA C502.
4. 5¼" VALVE OPENING.
5. ONE (1) 4½" NST PUMPER NOZZLE.
6. TWO (2) 2½" NST HOSE NOZZLE.
7. OPERATING NUT AND NOZZLE CAPS – NS#7 PENTAGON
8. SIX (6) INCH MECHANICAL JOINT CONNECTION WITH ACCESSORIES FOR 6.90 O.D. DI PIPE.
9. OPERATION: OPEN COUNTERCLOCKWISE (LEFT).
10. DEPTH AS REQUIRED.
11. CONTRACTOR TO SUPPLY AND INSTALL HYDRANT
12. TOP OF BLOCKING TO BE 2 INCHES FROM HYDRANT WEEP HOLES.

FIRE HYDRANT (7)

NOT TO SCALE

SITE PLAN REVIEW

RODE

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STATE OF NEW HAMPSHIRE – NICHOLAS J. FIORE No. 13286 – LICENSED PROFESSIONAL ENGINEER

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	REVISED PER SPR COMMENTS	01.25.24
2	FSPR AMENDMENT SUBMISSION	08.12.24

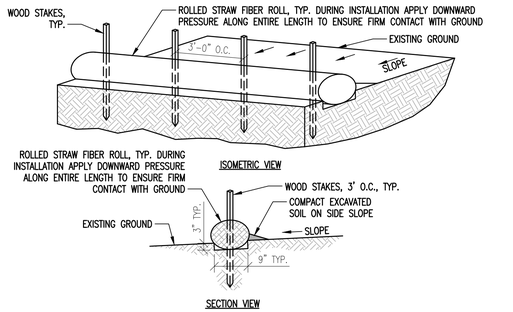
DATE: 08.15.22

SCALE: NO SCALE

WATER DETAILS

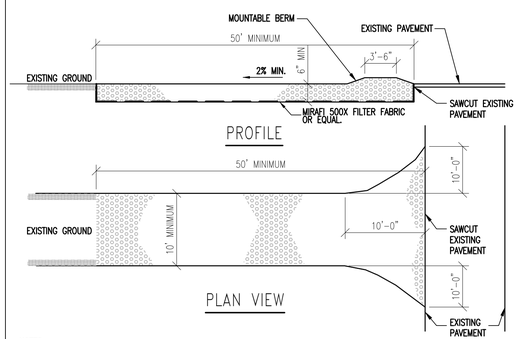
C-409

S:\PROJECTS\0-202222122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-40X CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:24 AM



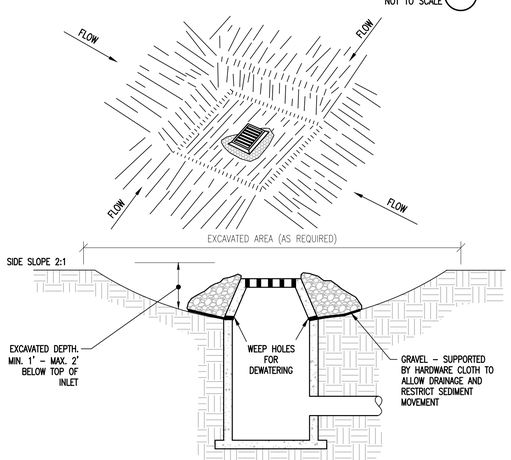
STRAW FIBER ROLL NOTES:
1. INSTALL ROLLED STRAW FIBER ROLL PARALLEL ALONG THE CONTOUR OF THE SLOPE.
2. WHERE PROJECT ACTIVITIES ARE WITHIN 50 FEET OF A WETLAND, A DOUBLE ROW OF FIBER ROLLS SHALL BE USED.
3. TO MAXIMIZE SEDIMENT CONTAINMENT WITH THE STRAW FIBER ROLL, PLACE THE INITIAL STRUCTURE AT THE TOP/CREST OF THE SLOPE IF SIGNIFICANT RUNOFF IS EXPECTED FROM ABOVE. IF NO RUNOFF FROM ABOVE IS EXPECTED, THE INITIAL STRAW WATTLE CAN BE INSTALLED AT THE APPROPRIATE DISTANCE DOWNHILL FROM THE TOP/CREST OF THE SLOPE. THE FINAL STRUCTURE SHOULD BE INSTALLED AT OR JUST BEYOND THE BOTTOM/TOE OF THE SLOPE. WATTLES SHOULD BE INSTALLED PERPENDICULAR TO THE PRIMARY DIRECTION OF OVERLAND FLOW

STRAW FIBER ROLL – SOIL (1)
NOT TO SCALE



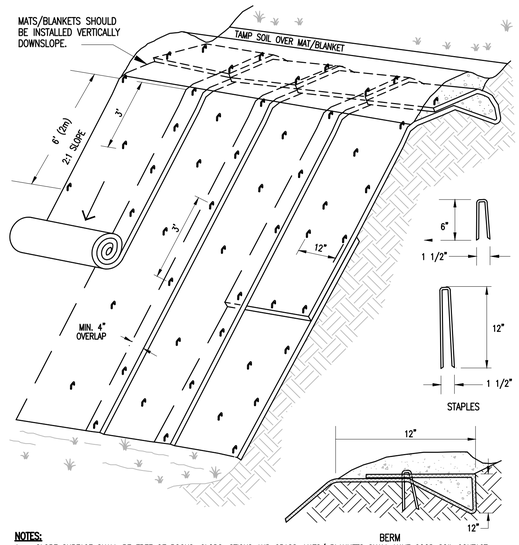
NOTES:
1. STONE SIZE: USE 3" (MIN) CRUSHED STONE.
2. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. REPAIR AND/OR CLEANOUT ANY MEASURES USED TO TRAP SEDIMENT. TRACKING ONTO PUBLIC RIGHT–OF–WAYS SHALL **NOT** BE ALLOWED. ALL SEDIMENT SPILLED, DROPPED, OR WASHED ONTO PUBLIC RIGHT–OF–WAYS MUST BE REMOVED IMMEDIATELY AND ANY WASH WATER MUST BE CONTAINED AND PROPERLY DISPOSED OF.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
5. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STABILIZED CONSTRUCTION ENTRANCE (2)
NOT TO SCALE



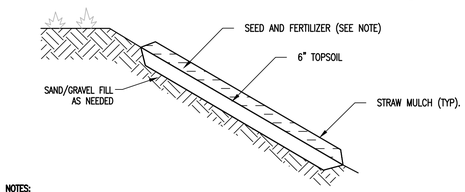
NOTES:
1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

INLET PROTECTION (3)
NOT TO SCALE



NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. THERE SHALL BE NO PLASTIC, OR MULTI–FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED. (NOT APPLICABLE TO TURF REINFORCEMENT MATS).
5. TURF REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.
6. EROSION FABRIC SHALL BE EC–4Y 100% BIODEGRADABLE COIR MAT AVAILABLE THROUGH EAST COAST EROSION CONTROL OR EQUAL.

EROSION CONTROL BLANKET (4)
NOT TO SCALE



NOTES:
1. SEEDING AND MULCHING OF DISTURBED AREAS SHALL TAKE PLACE WITHIN 48 HOURS OF FINAL GRADING.
2. MULCH: HAY SHALL NOT BE USED. STRAW MULCH SHALL BE UTILIZED AND SHALL BE APPLIED AT A RATE OF 90–1,000 LBS/1,000 SF. MULCH SHALL NOT BE PLACED ON SLOPES OF GREATER THAN 3:1. SEED IMPREGNATED EROSION CONTROL NETTING SHALL BE USED IN ITS PLACE.
3. SEED: SEEDING SHALL OCCUR AFTER APRIL 15 AND PRIOR TO SEPTEMBER 15TH IN ORDER TO ESTABLISH A STAND OF GRASS PRIOR TO GROUND FREEZING. SEED SHALL BE IN ACCORDANCE WITH SEED SPECIFICATION ON THIS SHEET.
4. COVER SEED WITH ¼ INCH SOIL UNLESS A HYDROSEEDER IS USED.
5. MULCH ANCHORING: SHALL BE ACCOMPLISHED BY DEGRADABLE MULCH NETTING. USE WHEN SLOPES ARE GREATER THAN 10%.
6. TOPSOIL AND MULCHING NOT TO BE APPLIED IN AREAS OF TRAVEL WAYS.

SEEDED AND MULCHED AREAS DETAIL (5)
NOT TO SCALE

SEEDING SPECIFICATION:

URBAN MIX GRASS SEED– FOR USE IN GRASSED LAWN AREAS AROUND BUILDING AND PARKING – TEMPORARY AND PERMANENT APPLICATIONS		
% BY WEIGHT	LBS. LIVE SEED BY ACRE	TYPE OF SEED
66.0	40.0	CREEPING RED FESCUE
33.0	20.0	KENTUCKY BLUEGRASS
100	60.0 # LIVE SEED/ ACRE	

CONSERVATION MIX GRASS SEED– FOR USE IN ALL OTHER AREAS		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
50	15.0	SMOOTH BROMEGRASS
17	5.0	RYEGRASS
33	10.0	BIRDSFOOT TREFOIL
100	30.0 # LIVE SEED/ACRE	

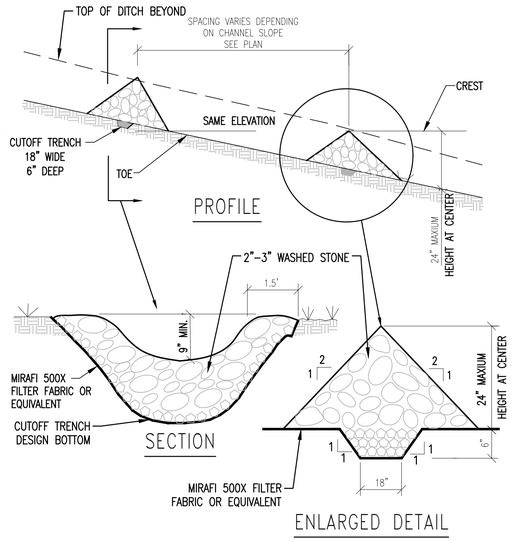
FERTILIZER– 10 LBS. PER 1000S.F.
SPRING SEEDING
FALL SEEDING

LIME– 90 LBS. PER 1000S.F.
DOLOMITIC GROUND LIMESTONE
NOT LESS THAN 85% OF THE TOTAL CARBONATE

TOP SOIL
4" MINIMUM APPROVED TOPSOIL

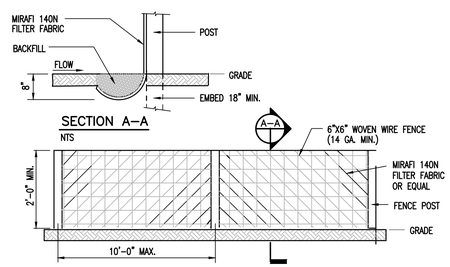
STRAW MULCH– 2 BALES PER 1000S.F.
APPLY BINDER OR NETTING AS NEEDED

SEED SEPCIFICATION (6)
NOT TO SCALE



NOTES:
1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN PLANS.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
6. REMOVE ACCUMULATED SEDIMENT BEHIND CHECK DAM WHEN 1/2 THE HEIGHT OF THE DAM. REPLACE STONES AS NECESSARY.

STONE CHECK DAM DETAIL (7)
NOT TO SCALE



NOTES:
1. **WHERE SPACE ALLOWS OR AS NOTED ON THE EPSC PLAN SILT FENCE SHALL BE SUBSTITUTED WITH A WOOD MULCH BERM. REFER TO DETAIL ON THIS SHEET.**
2. SILT FENCE SHALL BE PRE–FABRICATED EROSION CONTROL FENCE BY MIRAFI OR EQUAL, OR CONSTRUCTED IN PLACE AS SPECIFIED HEREIN.
3. CONSTRUCTED IN PLACE SILT FENCE:
   A. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
   B. FILTER FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE TIES SPACED EVERY 24" AT TOP OF MID SECTION.
   C. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.
3. INSPECTION SHALL BE FREQUENT (MINIMUM ONCE A WEEK AND AFTER EVERY RAINFALL). MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND SEDIMENT REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.

SILT FENCE (8)
NOT TO SCALE

EROSION CONTROL NOTES

WINTER EROSION CONTROL NOTES
1. TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE ADDITIONAL STABILIZATION TECHNIQUES SPECIFIED IN THIS SECTION SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1.
2. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO ONE ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
3. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, 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.
4. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
5. AFTER OCTOBER 15TH, 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.
6. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH THE ABOVE SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.

GENERAL EROSION CONTROL NOTES
1. THE "ON–SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON–SITE FROM DAY–TO–DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT TO THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE OWNER'S REP.
3. DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK MOUNTED SPRAY BAR. CALCIUM CHLORIDE(AASHTO M 144) OR SODIUM CHLORIDE(AASHTO M 143) SHALL BE USED AS DIRECTED BY THE OWNER'S REP.
4. ALL EROSION AND STORMWATER CONTROL SYSTEMS SHALL BE INSPECTED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A STORM EVENT OF 0.5" OR GREATER. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS THEY ACCUMULATE AND PLACED IN AREAS WHERE FURTHER EROSION IS UNLIKELY.
5. A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, SHALL BE SUBMITTED TO THE NHDES WITHIN 24 HOURS OF EACH INSPECTION THAT:
   A) DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
   B) IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
   C) INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND
6. RETAIN A COPY OF THE REPORT PREPARED PURSUANT TO (5), ABOVE, ON–SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL, STATE, AND LOCAL OFFICIALS
7. ALL PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
8. DETENTION BASINS AND SWALES SHALL BE INSTALLED PRIOR TO ROUGH GRADING THE SITE.
9. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   – BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   – A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   – A MINIMUM OF 3" OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
   – EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
13. LOT DISTURBANCE OTHER THAN THAT SHOWN ON THE APPROVED PLANS SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.
14. APPROPRIATE SILTATION/EROSION/TURBIDITY CONTROLS SHALL BE IN PLACE PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. SILT FENCE(S) MUST BE REMOVED ONCE THE AREA IS STABILIZED.
15. DISCHARGE FROM DEWATERING OF WORK AREAS SHALL BE TO SEDIMENT BASINS THAT ARE:
   A) LOCATED IN UPLANDS;
   B) LINED WITH HAY BALES OR OTHER ACCEPTABLE SEDIMENT TRAPPING LINERS;
   C) SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS, IN ALL CASES WITH A MINIMUM OF 20 FEET OF UNDISTURBED VEGETATED BUFFER.
16. WITHIN THREE DAYS OF FINAL GRADING, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED BY SEEDING AND MULCHING DURING THE GROWING SEASON, OR IF NOT WITHIN THE GROWING SEASON, BY MULCHING WITH TACK OR NETTING AND PINNING ON SLOPES STEEPER THAN 3:1.
17. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED WITHIN THE GROWING SEASON, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY SEEDING AND MULCHING.
18. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED OUTSIDE THE GROWING SEASON, ALL EXPOSED AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY MULCHING AND TACK. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED BY MATTING AND PINNING.
19. PROPER HEADWALLS SHALL BE CONSTRUCTED WITHIN SEVEN DAYS OF CULVERT INSTALLATION.
20. CULVERT OUTLETS SHALL BE PROTECTED IN ACCORDANCE WITH THE DES BEST MANAGEMENT PRACTICES FOR URBAN STORMWATER RUNOFF MANUAL (JANUARY 1996) AND THE STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (AUGUST 1992).
21. THE CONTRACTOR RESPONSIBLE FOR COMPLETION OF THE WORK SHALL UTILIZE TECHNIQUES DESCRIBED IN THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008).
22. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL ALL BMPS HAVE BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
23. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM THE CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
24. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

EROSION CONTROL CONSTRUCTION SEQUENCE:
1. THE "ON–SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON SITE FROM DAY TO DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. HOLD PRE–CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION, WITH THE CONTRACTOR, OWNER, AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL EROSION CONTROL MEASURES DELINEATED ON THE PLANS AND ANY ADDITIONAL MEASURES THAT ARE NECESSARY TO MINIMIZE EROSION. THE CONTRACTOR SHALL HAVE EROSION CONTROL MATERIALS AND INSTALLATION EQUIPMENT ON SITE AT ALL TIMES.
3. IF POSSIBLE, ALL TEMPORARY EROSION CONTROL MEASURES REQUIRED FOR WORK PROPOSED DURING THE WINTER (BETWEEN OCTOBER 15 AND MAY 1), SHALL BE INSTALLED PRIOR TO OCTOBER 1.
4. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL INLET PROTECTION ON EXISTING AND NEW CATCH BASINS.
7. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
8. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
9. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
10. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES:
1. LIMIT LENGTH OF EXPOSURE OF UNSTABILIZED SOIL TO 45 DAYS OR LESS.
2. HAY SHALL NOT BE USED.
3. DOUBLE ROW OF STRAW WATTLES SHALL BE INSTALLED ALONG THE WETLAND BOUNDARY. THESE SHALL REMAIN IN PLACE UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRAW WATTLES WHEN IT BECOMES 6 INCHES DEEP. THE PERIMETER CONTROL WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
4. INSTALL STONE CHECK DAMS IN GRASS–LINED SWALES 50 FEET ON CENTER TO PREVENT SILT FROM WASHING INTO THE DRAINAGE SYSTEM DURING CONSTRUCTION. SEDIMENT SHALL BE REMOVED FROM BEHIND THE DAMS WHEN IT BECOMES 6 INCHES DEEP. STONE CHECK DAMS SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED.
5. DROP INLET PROTECTION SHALL BE PROVIDED AROUND ALL EXISTING AND PROPOSED CATCH BASINS. PROTECTION SHALL REMAIN UNTIL ALL DISTURBED AREAS ARE STABILIZED. SEDIMENT SHALL BE REMOVED FROM DROP INLET PROTECTION WHEN THE STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN IT NO LONGER DRAINS PROPERLY.
6. EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE DISPOSED OF OFFSITE OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SUITABLE BY THE OWNER'S REPRESENTATIVE.
7. STOCKPILED MATERIAL (TOPSOIL, BORROW, ETC.) SHALL HAVE SILT FENCE CONSTRUCTED AROUND THE PERIMETER. THE STOCKPILED MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO PREVENT SOIL EROSION AND SEDIMENTATION OFF SITE. LOCATE STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, IF POSSIBLE. DURING WINDY CONDITIONS, STOCKPILED MATERIAL SHALL BE COVERED OR WATERED APPROPRIATELY TO PREVENT WIND EROSION.

PERMANENT EROSION CONTROL MEASURES:
1. GRASS LINED SWALES SHALL BE TOP SOILED, SODDED AND FERTILIZED AREAS WHICH EXHIBIT SIGNS OF EROSION SHALL BE RE–SODDED IMMEDIATELY AND MAINTAINED UNTIL SOD HAS PERMANENT HOLD AND IS HEALTHY.
2. WHEN CONSTRUCTION IS COMPLETED IN AN AREA, IT SHALL BE IMMEDIATELY TOP SOILED, SEEDED, FERTILIZED AND MULCHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL DISTURBED AREAS, INCLUDING WATERING, UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
4. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
5. RE–SEEDING SHALL BE DONE UNTIL ALL AREAS ARE COMPLETELY COVERED WITH A MATURE STRAND OF GRASS. AN AREA SHALL BE CONSIDERED COVERED WHEN THE ENTIRE SURFACE CONTAINS A VERDUROUS STAND OF GRASS. AREAS THAT, IN THE OPINION OF THE ENGINEER, ARE PREDOMINATELY WEEDS SHALL BE PLOWED UP, FINE GRADED, FERTILIZED AND RE–SEEDED IN THE MANNER SPECIFIED PREVIOUSLY, EXERCISING CAUTION NOT TO CAUSE DAMAGE TO NEW OR EXISTING PLANT MATERIAL.

SITE PLAN REVIEW

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STATE OF NEW HAMPSHIRE
Nicholas J. Fiore
No. 13286
LICENSED
PROFESSIONAL ENGINEER

1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date
1	FSPR RE–SUBMISSION	12.06.23
2	REVISED PER SPR COMMENTS	01.25.24
3	FSPR AMENDMENT SUBMISSION	08.12.24

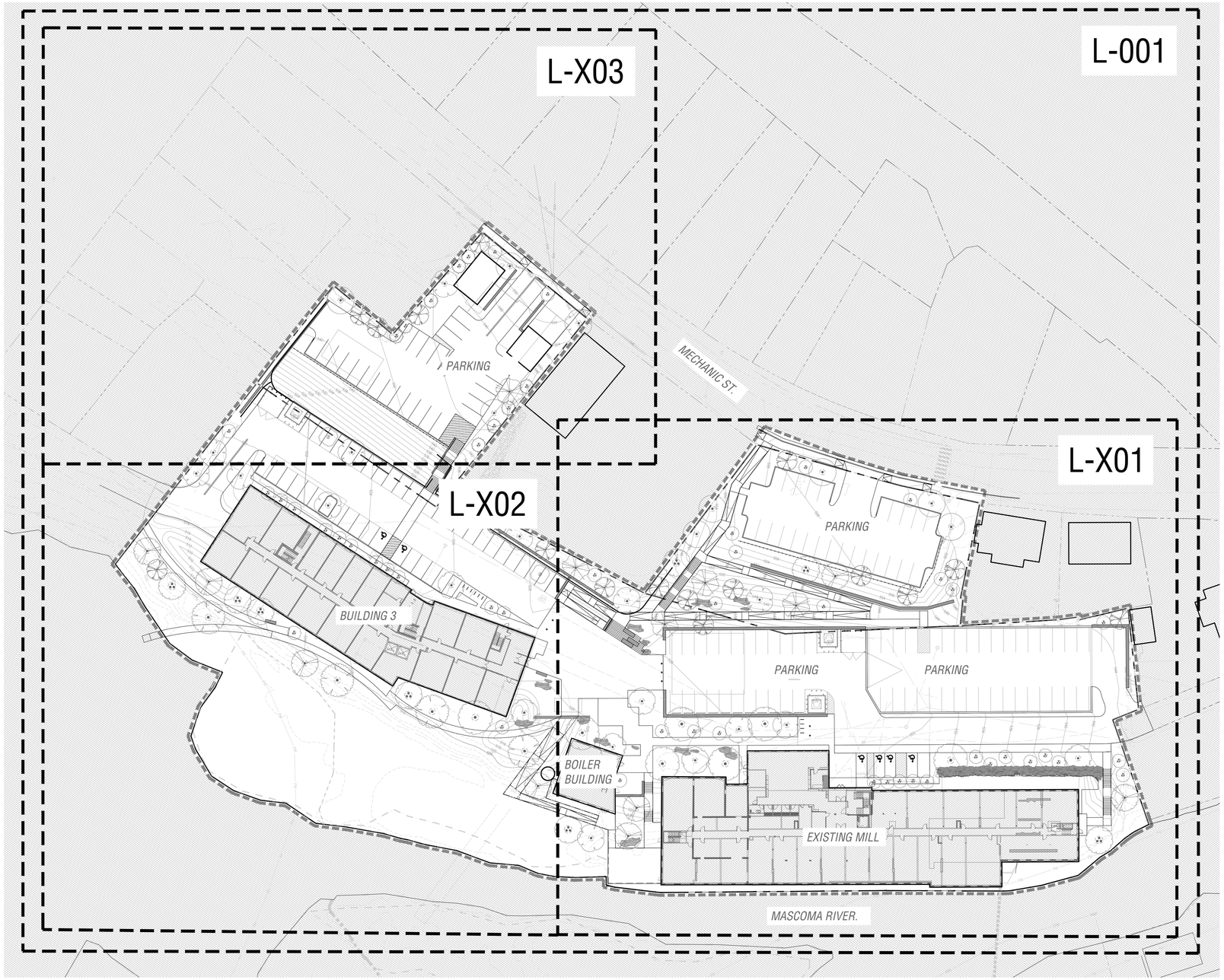
DATE: 08.15.22

SCALE: NO SCALE

EPSC DETAILS

C-410

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-410 CONSTRUCTION DETAILS.DWG – PLOTTED: 8/8/2024 9:24 AM



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GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH AND TO LOCATE ALL EXISTING SITE CONDITIONS AND UNDERGROUND UTILITIES, PIPES, AND OTHER SUBSTRUCTURES,AND TO PROTECT THEM FROM DAMAGE. THE EXPENSE OF REPAIR, BODILY INJURY OR REPLACEMENT OF SAID SUBSTRUCTURES INCLUDING DAMAGE OF THE OWNER'S PROPERTY SHALL BE BORN BY THE CONTRACTOR. THE CONTRACTOR SHALL HAND DIG FOOTINGS, TREE WELLS, PLANTING BEDS, ETC. AS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES PRIOR TO ANY EXCAVATION.
2. LOCATION AND ELEVATION OF ALL EXISTING IMPROVEMENTS WITH AND ADJACENT TO THE AREA OF WORK SHALL BE CONFIRMED BY FIELD MEASUREMENT PRIOR TO EXCAVATION AND CONSTRUCTION OF NEW WORK. EXTREME CARE SHALL BE EXERCISED IN EXCAVATION AND WORKING NEAR EXISTING UTILITIES. REFER TO CIVIL DRAWING FOR GENERAL REFERENCE. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES, PIPES AND OTHER SUBSTRUCTURES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS, DETAILS AND SPECIFICATIONS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION IN THE FIELD.THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY, ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE.
3. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, LANDSCAPING, AND FEATURES TO REMAIN ON AND/OR ADJACENT TO THE PROJECT SITE DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ALL DAMAGE RESULTING FROM HIS OPERATIONS OR NEGLIGENCE.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ENFORCE SAFETY MEASURES OR REGULATIONS.
5. IN AN EMERGENCY THREATENING THE SAFETY OF LIFE, WORK OR ADJOINING PROPERTY, THE CONTRACTOR IS HEREBY INSTRUCTED TO ACT AT HIS DISCRETION TO PREVENT SUCH LOSS OR INJURY.
6. ANY CONFLICTING INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER OR THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER SHALL ASSUME THAT THE CONTRACTOR HAS INCORPORATED THE SPECIFIED ITEM.
7. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION OF DESIGN WHEN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT CONFLICT WITH THE INFORMATION SHOWN ON THE EXISTING CONDITIONS AND PROPOSED SITE PLANS. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE SUBCONTRACTOR'S ACCOMPLISHMENT OF SCOPE OF WORK. CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH OTHER TRADES WORKING ON THE SITE SIMULTANEOUSLY.
9. CONTRACTOR SHALL NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE 72 HOURS PRIOR TO COMMENCEMENT OF WORK TO COORDINATE PROJECT INSPECTION SCHEDULES. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO PROVIDE ALL WORK. WORK TO BE COMPLETE IN PLACE AS SPECIFIED.
10. CONTRACTOR IS RESPONSIBLE FOR SETTING GRADES ON ALL HARD AND SOFT SURFACES. CONTRACTOR SHALL BE RESPONSIBLE FOR POSITIVE DRAINAGE.
11. ALL MATERIALS SHALL BE OF STANDARD, APPROVED AND FIRST GRADE QUALITY AND SHALL BE IN PRIME CONDITION WHEN INSTALLED AND ACCEPTED. ANY COMMERCIALLY PROCESSED OR PACKAGED MATERIAL SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED PACKAGING BEARING THE MANUFACTURER'S GUARANTEED ANALYSIS.
12. THE CONTRACTOR AGREES TO HOLD THE CITY AND THE A/E HARMLESS FROM ANY CLAIMS ARISING OUT OF HIS OPERATIONS OR THE OPERATIONS OF ANY OF HIS SUBCONTRACTORS, MATERIALS SUPPLIERS, OR AGENTS.
13. THE CONTRACT DRAWINGS REPRESENT THE FINISHED CONSTRUCTION AND DO NOT INDICATE METHODS, PROCEDURES, OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO MAINTAIN THE INTEGRITY OF STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, CONSTRUCTION, AND MAINTENANCE OF ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING.
14. ALL LOCAL, MUNICIPAL, AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THE PROJECT SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE ENFORCEMENT OF FEDERAL AND STATE OCCUPATIONAL SAFETY AND HEALTH REGULATIONS AND REQUIREMENTS.
15. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID. PERMITS FOR ANY CONSTRUCTION DEPICTED IN THESE PLANS SHALL BE OBTAINED BY THE CONTRACTOR.
16. DO NOT SCALE ANY DRAWINGS IN THIS SET. ALL WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER THE SCALE SHOWN ON THE PLANS, SECTIONS, AND DETAILS. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL REQUEST CLARIFICATIONS FROM THE OWNER'S AUTHORIZED REPRESENTATIVE.
17. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SIDEWALKS, RAMPS, STAIRS AND HANDRAILS COMPLY WITH THE ADA STANDARD REQUIREMENTS. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR THE OWNER'S AUTHORIZED REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN DESIGN INFORMATION ADA REQUIREMENTS PRIOR TO CONSTRUCTION.

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 40'-0"

ORIENTATION PLAN AND GENERAL NOTES

L000

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L000 Version: August 08, 2024 11:49:48am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L0-ORIENTATION PLANS.dwg
5/18/2022 5:23:22 PM

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PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 30'-0"

ILLUSTRATIVE SITE PLAN

L001

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L001 Version: August 08, 2024 01:07:32pm Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L0-ORIENTATION PLANS.dwg
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CONSTRUCTION SCHEDULE

KEY	DESCRIPTION	DETAIL	MATERIAL	FINISH	COLOR	COMMENTS
ASPHALT PAVING						
AP-01	ASPHALT PAVING - TYPE 1	RE: CIVIL	ASPHALT PAVING (CITY STANDARD, PEDESTRIAN RATED)	CITY STANDARD	CITY STANDARD	PAVEMENT SURFACING, SUBGRADE AND PAVEMENT MARKINGS PER CIVIL
AP-02	ASPHALT PAVING - TYPE 2	RE: CIVIL	ASPHALT PAVING (VEHICULAR RATED)	CITY STANDARD	CITY STANDARD	PAVEMENT SURFACING, SUBGRADE AND PAVEMENT MARKINGS PER CIVIL
CURBING						
CB-01	CURB - TYPE 1	RE: CIVIL	GRANITE CURB	CITY STANDARD	CITY STANDARD	PER CIVIL
CB-02	CURB - TYPE 2	RE: CIVIL	FLUSHED GRANITE CURB	CITY STANDARD	CITY STANDARD	PER CIVIL
CONCRETE PAVING						
CP-01	CONCRETE PAVING - TYPE 1	01/ L301	INTEGRAL COLOR CIP CONCRETE PAVING (PEDESTRIAN RATED)	TOP CAST, PER APPROVED MOCK UP SAMPLE	TBD, PER APPROVED MOCK UP SAMPLE	CONTROL JOINTS AND EXPANSION JOINTS PER PLANS AND DETAILS. THICKNESS, SUBGRADE CONDITION AND REINFORCEMENT PER CIVIL. SUBMIT SHOP DRAWINGS FOR PAVING AND JOINT LAYOUT. SUBMIT SAMPLES AND PROVIDE MOCK UP PER SPECIFICATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT
CP-02	CONCRETE PAVING - TYPE 2	02/ L301	INTEGRAL COLOR CIP CONCRETE PAVING (VEHICULAR RATED)	TOP CAST, PER APPROVED MOCK UP SAMPLE	TBD, PER APPROVED MOCK UP SAMPLE	CONTROL JOINTS AND EXPANSION JOINTS PER PLANS AND DETAILS. THICKNESS, SUBGRADE CONDITION AND REINFORCEMENT PER CIVIL. SUBMIT SHOP DRAWINGS FOR PAVING AND JOINT LAYOUT. SUBMIT SAMPLES AND PROVIDE MOCK UP PER SPECIFICATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT
UNIT PAVING						
UP-01A	UNIT PAVER - TYPE 1A	04/ L301	CLAY BRICK PAVERS (PEDESTRIAN RATED)	RUMBLED	TBD	SUBSLAB AND SUBGRADE CONDITION PER DETAILS. SUBMIT SAMPLES, PRODUCT DATA, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT
UP-01B	UNIT PAVER - TYPE 1B	05/ L301	CLAY BRICK PAVERS (VEHICULAR RATED)	RUMBLED	TBD	SUBSLAB AND SUBGRADE CONDITION PER DETAILS. SUBMIT SAMPLES, PRODUCT DATA, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT
UP-03	UNIT PAVER - TYPE 3	05/ L301	CLAY BRICK PAVERS (VEHICULAR RATED)	RUMBLED	TBD	SUBSLAB AND SUBGRADE CONDITION PER DETAILS. SUBMIT SAMPLES, PRODUCT DATA, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT
WOOD DECKING						
WD-01	WOOD DECKING - TYPE 1	01-03/ L302	5/4" X 6" NOMINAL KEBONY WOOD DECKING	SMOOTH	NATURAL	KEBONY DECKING SLATS FASTENED TO PRESSURE TREATED FRAME. FRAMING TO BE INSTALLED ON REINFORCED CONCRETE FOOTINGS AND ADJACENT WALLS. WRAP TOP FACE AND SIDES OF FRAMING WITH VYCOR DECK PROTECTOR, OR APPROVED EQUAL. PAINT ANY EXPOSED LETTERING BLACK. FASTENING SYSTEM, TOP OF DECKING BOARDS UTILIZING A SMART BIT, 3/16" STAINLESS STEEL SCREWS, COUNTER SINK ALL HEADS. SUBMIT SAMPLE, SHOP DRAWINGS, AND PROVIDE MOCK UP FOR APPROVALS BY LANDSCAPE ARCHITECT.
FENCING AND RAILING						
FR-01	HAND RAIL - TYPE 1	04/ L302	STEEL	TBD	TBD	HANDRAILS SHALL ADHERE TO ALL LOCAL AND STATE BUILDING AND ADA CODES. REFER TO CONSTRUCTION PLANS FOR LENGTH AND QUANTITY. PROVIDE SHOP DRAWINGS, SAMPLE AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT. ALL WELDS TO BE SHOP FINISHED AND GROUND SMOOTH PER STEEL AESS 4.
FR-02	TERRACE GUARD RAIL	-	STEEL	TBD	TBD	GUARDRAIL SHALL ADHERE TO ALL LOCAL AND STATE BUILDING AND ADA CODES. REFER TO CONSTRUCTION PLANS FOR LENGTH AND QUANTITY. PROVIDE SHOP DRAWINGS, SAMPLE AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT. ALL WELDS TO BE SHOP FINISHED AND GROUND SMOOTH PER STEEL AESS 4.
FR-03	DECK RAILING	-	STEEL	TBD	TBD	GUARDRAIL SHALL ADHERE TO ALL LOCAL AND STATE BUILDING AND ADA CODES. REFER TO CONSTRUCTION PLANS FOR LENGTH AND QUANTITY. PROVIDE SHOP DRAWINGS, SAMPLE AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT. ALL WELDS TO BE SHOP FINISHED AND GROUND SMOOTH PER STEEL AESS 4.
FR-04	SCREENING FENCE (FOR DUMPSTER)	RE: CIVIL	RE: CIVIL	RE: CIVIL	RE: CIVIL	LENGTH PER PLANS. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FOUNDATIONS AND REINFORCING PER STRUCTURAL ENGINEER. PROVIDE FINISH SAMPLE, PRODUCT DATA, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
FR-05	SCREENING FENCE (FOR PARKING)	RE: CIVIL	RE: CIVIL	RE: CIVIL	RE: CIVIL	LENGTH PER PLANS. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FOUNDATIONS AND REINFORCING PER STRUCTURAL ENGINEER. PROVIDE FINISH SAMPLE, PRODUCT DATA, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
LANDSCAPE MATERIALS						
LS-02	DECORATIVE GRAVEL - TYPE 2	08 L301	4" LAYER OF DECORATIVE AGGREGATE WITH STEEL EDGING	NATURAL	-	4-6" ANGULAR CHOPPED STONE, PROVIDE 3/16" X 6" BLACK STEEL EDGING ADJACENT TO PLANTING AREAS. PROVIDE SAMPLES AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
STAIRS AND RAMPS						
SR-01	STAIRS - TYPE 1	04/ L302	INTEGRAL COLOR CAST IN PLACE CONCRETE STAIRS	TOP CAST, PER APPROVED MOCK UP SAMPLE	TBD, PER APPROVED MOCK UP SAMPLE	CAST IN PLACE CONCRETE BASE, RISERS AND TREADS, REINFORCED PER STRUCTURAL ENGINEER. SUBGRADE CONDITION PER CIVIL. EXPOSED SIDES OF STEP TO BE SOLID CONCRETE WALL, TO MATCH COLOR AND FINISH OF RISERS AND TREADS. SUBMIT SAMPLE, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT
SR-02	STAIRS - TYPE 2	-	METAL GRATING STAIRS	TBD	TBD	METAL GRATING RISERS AND TREADS ANCHORED TO CAST IN PLACE CONCRETE BASE. CONCRETE FOUNDATION SIZING AND REINFORCING PER STRUCTURAL ENGINEER. SUBGRADE CONDITION PER CIVIL. SUBMIT SAMPLE, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
SR-03	RAMP	-	METAL GRATING RAMP	TBD	TBD	METAL GRATING SURFACE ANCHORED TO CAST IN PLACE CONCRETE BASE. CONCRETE FOUNDATION SIZING AND REINFORCING PER STRUCTURAL ENGINEER. SUBGRADE CONDITION PER CIVIL. SUBMIT SAMPLE, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT
SR-04	BIKE WHEEL RAMP	-	METAL	TBD	TBD	GALVANIZED STEEL PLATE MECHANICALLY FASTENED TO ADJACENT METAL STAIR. ALL FASTENERS TO BE CONCEALED FROM VIEW. SUBMIT SAMPLE, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
SITE WALLS						
SW-01	SITE WALL - TYPE 1	01/ L303	INTEGRAL COLOR CAST IN PLACE CONCRETE STRUCTURAL RETAINING WALL	BOARD FORM	TBD, PER APPROVED MOCK UP SAMPLE	BOARD FORMED AND FINISHED CAST IN PLACE CONCRETE WALL. SMOOTH SURFACE AT TOP OF WALL. RETAINING WALL DIMENSIONS AND REINFORCING PER STRUCTURAL ENGINEER. SUBMIT SAMPLE, SHOP DRAWINGS AND MOCKUPS FOR APPROVAL BY LANDSCAPE ARCHITECT. PROVIDE 3 MOCKUPS OF 3 DIFFERENT FORM PATTERNS SELECTED BY THE LANDSCAPE ARCHITECT.
SW-02	SITE WALL - TYPE 2	02-03/ L303	STACKED STONE RETAINING RETAINING WALL WITH PLANTINGS	REGIONALLY SOURCED/ SALVAGED NATURAL BOULDERS	TBD, PER APPROVED MOCK UP SAMPLE	STACKED STONE RETAINING WALL. REINFORCING PER STRUCTURAL ENGINEER. SUBMIT SAMPLES, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT.
SITE FEATURES						
SF-01	BENCH - TYPE 1	-	WOOD SLAT BENCH WITH STEEL FRAME AND STANCHIONS	WOOD: KEBONY, SMOOTH FRAME: POWDER COAT	WOOD: NATURAL FRAME: TBD, CUSTOM RAL	QUANTITY AND SIZE PER PLANS. CUSTOM WOOD BENCH WITH WOOD SLATS AND STEEL FRAME. FASTEN SLATS TO STEEL FRAME WITH HIDDEN FASTENERS. ALL EXPOSED EDGES TO BE EASED. SUBMIT SAMPLES, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT. BENCH ASSEMBLY TO BE FABRICATED BY SINGLE SITE FURNISHINGS MANUFACTURER. ANCHORING AND FOUNDATION PER STRUCTURAL ENGINEER.
SF-02	BENCH - TYPE 2	-	WOOD SLAT BENCH WITH STEEL FRAME AND STANCHIONS	WOOD: KEBONY, SMOOTH FRAME: POWDER COAT	WOOD: NATURAL FRAME: TBD, CUSTOM RAL	QUANTITY AND SIZE PER PLANS. CUSTOM WOOD BENCH WITH WOOD SLATS AND STEEL FRAME. FASTEN SLATS TO STEEL FRAME WITH HIDDEN FASTENERS. ALL EXPOSED EDGES TO BE EASED. SUBMIT SAMPLES, SHOP DRAWINGS AND MOCK UP FOR APPROVAL BY LANDSCAPE ARCHITECT. BENCH ASSEMBLY TO BE FABRICATED BY SINGLE SITE FURNISHINGS MANUFACTURER. ANCHORING AND FOUNDATION PER STRUCTURAL ENGINEER.
SF-03	STONE BOULDER	-	REGIONALLY SOURCED/SALAVAGED NATURAL BOULDERS	TBD	TBD, PER APPROVED MOCK UP SAMPLE	SIZE AND QUANTITY PER PLANS. BOULDERS TO BE REGIONALLY SOURED. CONTRACTOR TO SCHEDULE QUARRY TRIP TO TAG AND SELECT BOULDERS WITH LANDSCAPE ARCHITECT, PRIOR TO INSTALLATION.
SF-04	BIKE RACK	-	STEEL	POWDER COAT	TBD, CUSTOM RAL	ANCHORING AND FOOTING PER MANUFACTURERS RECOMMENDATIONS. PROVIDE PRODUCT DATA, SHOP DRAWING AND SAMPLE FOR LANDSCAPE ARCHITECT APPROVAL. MNPR - LANDSCAPE FORMS, MODEL: BOLA
BO-01	BOLLARD - TYPE 1	RE: CIVIL	RETRACTABLE BOLLARD	POWDER COAT	TBD, CUSTOM RAL	ANCHORING AND FOOTING PER MANUFACTURERS RECOMMENDATIONS, FOOTING AND REINFORCING PER STRUCTURAL ENGINEER. PROVIDE PRODUCT DATA, SHOP DRAWING AND SAMPLE FOR LANDSCAPE ARCHITECT APPROVAL.
BO-01	BOLLARD - TYPE 2	RE: CIVIL	FIXED BOLLARD	POWDER COAT	TBD, CUSTOM RAL	ANCHORING AND FOOTING PER MANUFACTURERS RECOMMENDATIONS, FOOTING AND REINFORCING PER STRUCTURAL ENGINEER. PROVIDE PRODUCT DATA, SHOP DRAWING AND SAMPLE FOR LANDSCAPE ARCHITECT APPROVAL.

CONSTRUCTION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES FOR ALL MATERIALS, FIXTURES, FURNISHINGS, ETC. QUANTITIES ARE PROVIDED HERE FOR REFERENCE ONLY.
2. CONTRACTOR TO PROVIDE PHYSICAL SAMPLES OF EACH FINISH TYPE, AND PROVIDE SHOP DRAWINGS OF ALL FABRICATED CONDITIONS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
3. CONTRACTOR TO VERIFY THE LAYOUT OF ALL MATERIALS IN THE FIELD FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. INCLUDING PAVING, BOLLARDS, TREE GRATES, LIGHT POLE BASES, FOUNTAINS, STEPS, SEATS AND WALLS.
4. CONTRACTOR TO PROTECT ALL HARDSCAPE IN PLACE ONCE CONSTRUCTED, AND TO REPLACE ANY DAMAGED OR CRACKED STONE DURING THE COURSE OF CONSTRUCTION.
5. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL MEP AND IRRIGATION SLEEVING BENEATH AND THROUGH HARDSCAPE.
6. MAINTENANCE: ALL REQUIRED LANDSCAPE AREAS SHALL BE MAINTAINED BY OWNER. THE LANDSCAPE AREAS SHALL BE MAINTAINED FREE OF DEBRIS AND LITTER AND ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION. DISEASED OR DEAD PLANT MATERIAL SHALL BE SATISFACTORY TREATED OR REPLACED PER THE CONDITIONS OF THE PERMIT.

LAYOUT NOTES

1. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS, LAYOUT COORDINATES, AND WORK FROM PREVIOUS AND ONGOING CONTRACTS IN THE FIELD. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT FOR DIRECTIONS IMMEDIATELY BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
2. CONTRACTOR IS TO VERIFY PROPERTY AND LIMIT-OF-WORK LINES PRIOR TO COMMENCING WORK.
3. THESE PLANS DO NOT PURPORT TO SHOW ALL ELEMENTS TO BE CONSTRUCTED. CONTRACTOR IS TO REVIEW ENTIRE CONSTRUCTION PLAN SET, IN ADDITION TO GEOTECHNICAL, CIVIL, ARCHITECTURAL, STRUCTURAL AND MEP PLAN SETS, IN ORDER TO COMPREHENSIVELY DETERMINE ALL ELEMENTS TO BE INSTALLED AND THEIR RELATION TO EACH OTHER. COORDINATE WITH OTHER CONSULTANT'S WORK TO PROPERLY EXECUTE CONTRACTOR'S WORK.
4. CONTRACTOR SHALL REQUEST A FIELD REVIEW BY THE LANDSCAPE ARCHITECT OF THE LAYOUT OF ALL ELEMENTS, AS SHOWN. CONTRACTOR SHALL STAKE ALL LOCATIONS AND OBTAIN APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
5. CONTRACTOR SHALL REQUEST A FIELD REVIEW BY THE LANDSCAPE ARCHITECT OF ALL SITE LIGHTING FIXTURES, JUNCTION BOXES, TRANSFORMERS, AND PANELS. CONTRACTOR SHALL STAKE ALL LOCATIONS AND OBTAIN APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. LIGHTING CIRCUITRY AND SOME JUNCTION BOX LOCATIONS MAY BE LOCATED ON ELECTRICAL ENGINEERING PLANS.
6. CONTRACTOR SHALL REQUEST A FIELD REVIEW BY THE LANDSCAPE ARCHITECT OF ALL FORMWORK OR A TYPICAL PORTION OF FORMWORK REPRESENTING SIMILAR WORK. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE LANDSCAPE ARCHITECT OF ALL FORMWORK FOR FLATWORK AND WALL WORK PRIOR TO CONCRETE POURING.
7. CONTRACTOR SHALL COORDINATE ALL LAYOUT WORK POINTS, MONUMENTS, GRID LINES, AND CONTROLS, AMONG ALL TRADES; SPECIFICALLY, BUT NOT LIMITED TO, SITE FORMATION, FLATWORK, AND WALL WORK.
8. CONTRACTOR SHALL REFER TO PAVING OR MATERIALS PLAN(S) FOR ALL FLATWORK AND WALL WORK JOINT LOCATIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS VERIFYING JOINT LAYOUT PRIOR TO INSTALLATION.
9. CONTRACTOR SHALL ERECT AND INSTALL ALL WORK LEVEL, PLUMB, SQUARE, TRUE, STRAIGHT, AND IN PROPER ALIGNMENT.
10. CONTRACTOR SHALL NOT SCALE DRAWINGS; CONTRACTOR SHALL USE DIMENSIONS SHOWN.
11. NO DIMENSIONS ARE ADJUSTABLE WITHOUT THE REVIEW AND APPROVAL OF LANDSCAPE ARCHITECT UNLESS NOTED [+/-] AND OR FV (FIELD VERIFY)/ VIF (VERIFY IN FIELD).
12. SIMILAR [SIM] MEANS COMPARABLE CHARACTERISTICS FOR THE CONDITIONS NOTED. CONTRACTOR SHALL VERIFY DIMENSIONS AND ORIENTATION ON THE PLANS AND ELEVATIONS.
13. DIMENSIONS NOTED CLEAR [CLR] MUST BE STRICTLY MAINTAINED ALLOWING FOR THICKNESS OF ALL FINISHES. CONTRACTOR SHALL FIELD VERIFY [FV] OR VERIFY IN FIELD [VIF] PRIOR TO CONSTRUCTION.
14. TYPICAL [TYP] MEANS IDENTICAL FOR ALL SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
15. ALIGN MEANS ACCURATELY LOCATE FINISH FACES IN THE SAME PLANE.
16. ALL ANGLES ARE ASSUMED TO BE 90 DEGREES UNLESS OTHERWISE NOTED.
17. ALL CURVES FOR PAVING, BANDS, PATHS, EDGING, AND HEADER BOARDS SHALL BE ALIGNED IN A SMOOTH AND CONTINUOUS FASHION AND SHALL MEET ADJACENT SURFACES AT 90 DEGREES, UNLESS OTHERWISE INDICATED. ALL WALK RADII AND CURVES SHALL BE SMOOTH AND CONTINUOUS WITHOUT ABRUPT CHANGES OR BENDS UNLESS OTHERWISE SHOWN.

SITE PLAN REVIEW

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE:

CONSTRUCTION SCHEDULE

L100

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L100 Version: August 08, 2024 11:50:34am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L1-CONSTRUCTION PLANS.dwg
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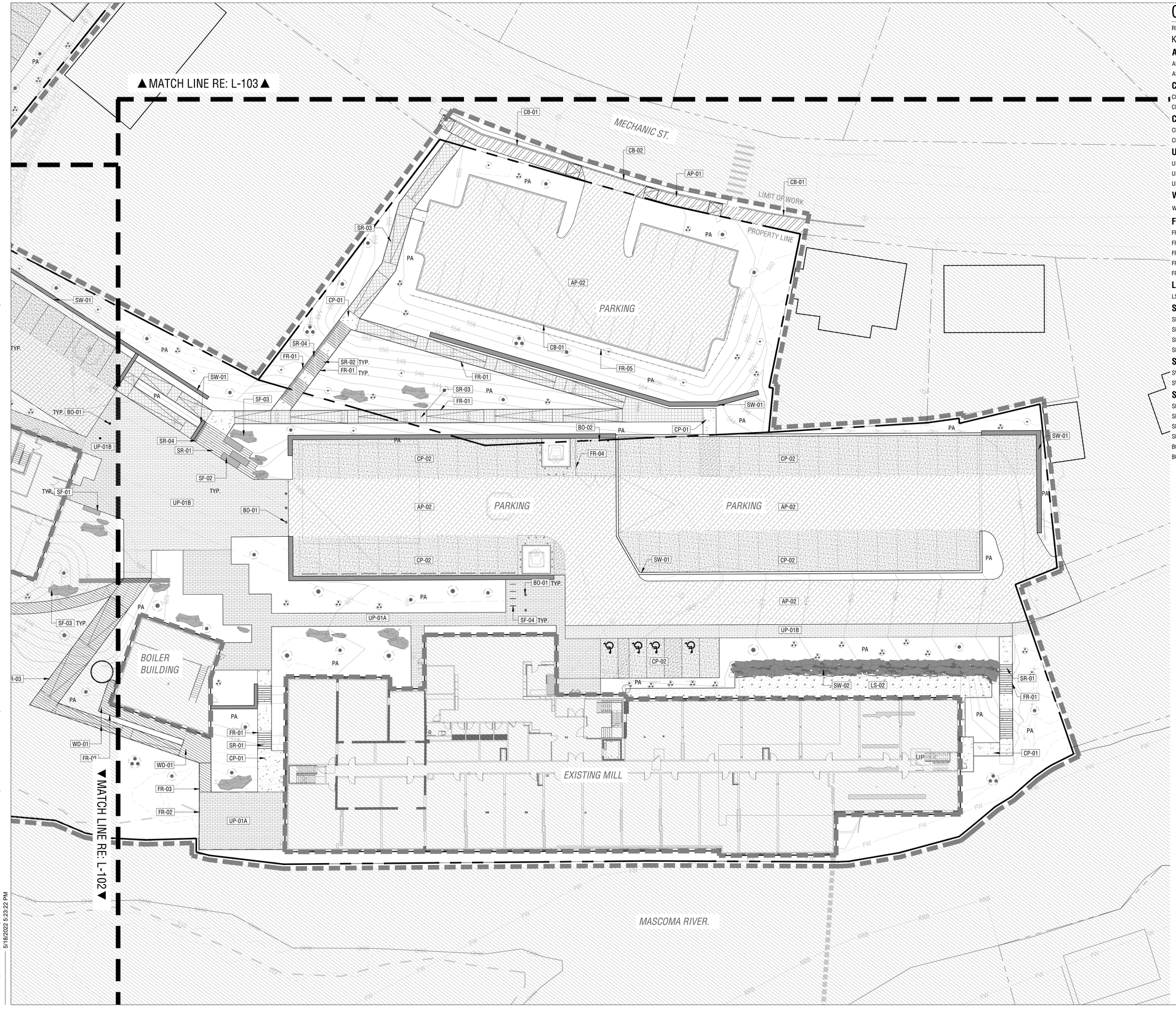

QUICK REFERENCE LEGEND

REFERENCE L1.00 FOR FULL CONSTRUCTION SCHEDULE

KEY SYM DESCRIPTION

ASPHALT PAVING
- AP-01 ASPHALT PAVING - TYPE 1
- AP-02 ASPHALT PAVING - TYPE 2

CURBING
- CB-01 CURB - TYPE 1
- CB-02 CURB - TYPE 2

CONCRETE PAVING
- CP-01 CONCRETE PAVING - TYPE 1
- CP-02 CONCRETE PAVING - TYPE 2

UNIT PAVING
- UP-01A UNIT PAVER - TYPE 1A
- UP-01B UNIT PAVER - TYPE 1B
- UP-03 UNIT PAVER - TYPE 3

WOOD DECKING
- WD-01 WOOD DECKING - TYPE 1

FENCING AND RAILING
- FR-01 HANDRAIL - TYPE 1
- FR-02 TERRACE GUARD RAIL
- FR-03 DECK RAILING
- FR-04 SCREENING FENCE (FOR DUMPSTER)
- FR-05 SCREENING FENCE (FOR PARKING)

LANDSCAPE MATERIALS
- LS-02 DECORATIVE GRAVEL TYPE 2

STAIRS AND RAMPS
- SR-01 STAIRS - TYPE 1
- SR-02 STAIRS - TYPE 2
- SR-03 RAMP
- SR-04 BIKE WHEEL RAMP

SITE WALLS
- SW-01 SITE WALL - TYPE 1
- SW-02 SITE WALL - TYPE 2

SITE FEATURES
- SF-01 BENCH - TYPE 1
- SF-02 BENCH - TYPE 2
- SF-03 STONE BOULDER
- SF-04 BIKE RACK
- BO-01 BOLLARD - TYPE 1
- BO-02 BOLLARD - TYPE 2

ABBREVIATIONS AND SYMBOLS
- PA PLANTING AREA
- TREE LOCATIONS

0 10 20 40
SCALE: 1"=20'-0"

SITE PLAN REVIEW

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PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
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DATE: 08.15.22

SCALE: 1" = 20'-0"

CONSTRUCTION PLANS

L101

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L101 Version: August 08, 2024 01:22:33pm Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L1-CONSTRUCTION PLANS.dwg
5/18/2022 5:23:22 PM

QUICK REFERENCE LEGEND

REFERENCE L1.00 FOR FULL CONSTRUCTION SCHEDULE

KEY SYM DESCRIPTION

ASPHALT PAVING
- AP-01 ASPHALT PAVING - TYPE 1
- AP-02 ASPHALT PAVING - TYPE 2

CURBING
- CB-01 CURB - TYPE 1
- CB-02 CURB - TYPE 2

CONCRETE PAVING
- CP-01 CONCRETE PAVING - TYPE 1
- CP-02 CONCRETE PAVING - TYPE 2

UNIT PAVING
- UP-01A UNIT PAVER - TYPE 1A
- UP-01B UNIT PAVER - TYPE 1B
- UP-03 UNIT PAVER - TYPE 3

WOOD DECKING
- WD-01 WOOD DECKING - TYPE 1

FENCING AND RAILING
- FR-01 HANDRAIL - TYPE 1
- FR-02 TERRACE GUARD RAIL
- FR-03 DECK RAILING
- FR-04 SCREENING FENCE (FOR DUMPSTER)
- FR-05 SCREENING FENCE (FOR PARKING)

LANDSCAPE MATERIALS
- LS-02 DECORATIVE GRAVEL TYPE 2

STAIRS AND RAMPS
- SR-01 STAIRS - TYPE 1
- SR-02 STAIRS - TYPE 2
- SR-03 RAMP
- SR-04 BIKE WHEEL RAMP

SITE WALLS
- SW-01 SITE WALL - TYPE 1
- SW-02 SITE WALL - TYPE 2

SITE FEATURES
- SF-01 BENCH - TYPE 1
- SF-02 BENCH - TYPE 2
- SF-03 STONE BOULDER
- SF-04 BIKE RACK
- BO-01 BOLLARD - TYPE 1
- BO-02 BOLLARD - TYPE 2

ABBREVIATIONS AND SYMBOLS
- PA PLANTING AREA
- TREE LOCATIONS

SITE PLAN REVIEW

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

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PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
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3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 20'-0"

CONSTRUCTION PLANS

L102

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L102 Version: August 08, 2024 11:54:10am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L1-CONSTRUCTION PLANS.dwg
5/18/2022 5:23:22 PM

QUICK REFERENCE LEGEND

REFERENCE L1.00 FOR FULL CONSTRUCTION SCHEDULE

KEY	SYM	DESCRIPTION
ASPHALT PAVING		
AP-01		ASPHALT PAVING - TYPE 1
AP-02		ASPHALT PAVING - TYPE 2
CURBING		
CB-01		CURB - TYPE 1
CB-02		CURB - TYPE 2
CONCRETE PAVING		
CP-01		CONCRETE PAVING - TYPE 1
CP-02		CONCRETE PAVING - TYPE 2
UNIT PAVING		
UP-01A		UNIT PAVER - TYPE 1A
UP-01B		UNIT PAVER - TYPE 1B
UP-03		UNIT PAVER - TYPE 3
WOOD DECKING		
WD-01		WOOD DECKING - TYPE 1
FENCING AND RAILING		
FR-01		HANDRAIL - TYPE 1
FR-02		TERRACE GUARD RAIL
FR-03		DECK RAILING
FR-04		SCREENING FENCE (FOR DUMPSTER)
FR-05		SCREENING FENCE (FOR PARKING)
LANDSCAPE MATERIALS		
LS-02		DECORATIVE GRAVEL TYPE 2
STAIRS AND RAMPS		
SR-01		STAIRS - TYPE 1
SR-02		STAIRS - TYPE 2
SR-03		RAMP
SR-04		BIKE WHEEL RAMP
SITE WALLS		
SW-01		SITE WALL - TYPE 1
SW-02		SITE WALL - TYPE 2
SITE FEATURES		
SF-01		BENCH - TYPE 1
SF-02		BENCH - TYPE 2
SF-03		STONE BOULDER
SF-04		BIKE RACK
BO-01		BOLLARD - TYPE 1
BO-02		BOLLARD - TYPE 2

ABBREVIATIONS AND SYMBOLS

PA	PLANTING AREA
	TREE LOCATIONS

0 10 20 40
SCALE: 1"=20'-0"

SITE PLAN REVIEW

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LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
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3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 20'-0"

CONSTRUCTION PLANS

L103

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L103 Version: August 08, 2024 11:51:43am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L1-CONSTRUCTION PLANS.dwg
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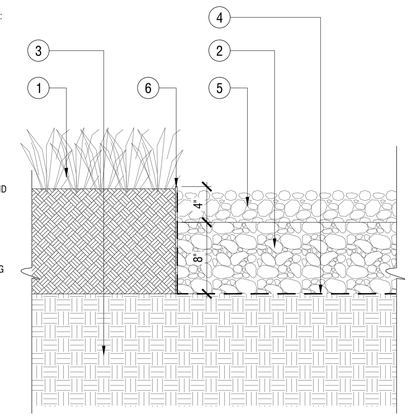
1. ADJACENT LANDSCAPE PLANTING AREA; SEE PLANTING PLANS
2. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
3. COMPACTED SUBGRADE; RE: GEOTECH REPORT
4. FILTER FABRIC; WRAP SIDES AND BOTTOM BETWEEN FIRST LIFT AND COMPACTED AGGREGATE BASE; RE: SPECS
5. DECORATIVE AGGREGATE; RE: CONSTRUCTION SCHEDULE
6. LANDSCAPE METAL EDGING; RE: CONSTRUCTION SCHEDULE FOR SIZE AND COLOR

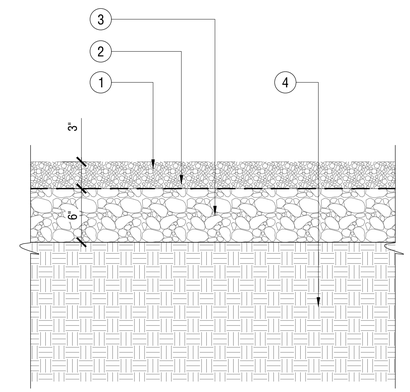
NOTES:
1. EDGING THAT CREATES CORNER SHALL BE CONTINUOUS. CUT EDGING SHALL NOT OCCUR AT CORNERS.
2. WHERE EDGING IS CUT, EDGING SHALL BE PAINTED TO MATCH SURFACE COLOR AND GROUND SMOOTH,



0 4" 8"
SCALE: 1 1/2" = 1'-0"

SECTION - DECORATIVE GRAVEL TYPE 2 AT PLANTING 08
BP-NH.LWM-HS-09

1. PERMEABLE DECORATIVE GRAVEL WITH LIQUID STABILIZER
2. CONTINUOUS FILTER FABRIC
3. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
4. PREPARED SUB-GRADE



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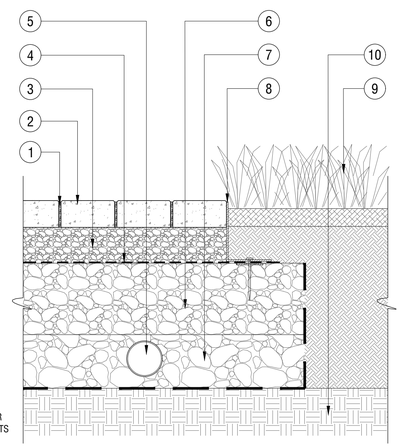
SCALE: 1 1/2" = 1'-0"

SECTION - DECORATIVE GRAVEL TYPE 1 07
BP-NH.LWM-HS-11

1. 1/4 JOINT FILLED WITH OPEN GRADED STONE (AASHTO #8)
2. BRICK UNIT PAVER; RE: CONSTRUCTION SCHEDULE FOR SIZE, FINISH, AND COLOR, RE: CONSTRUCTION PLANS FOR PAVING LAYOUT
3. CHOKER COURSE; 4" DEPTH 3/4" CRUSHED STONE
4. GEOGRID; EXTEND MIN. 3' UNDER PAVERS AND 6'-12" TO OUTSIDE OF PAVER INSTALLATION
5. 4" CPP PERFORATED UNDERDRAIN AT TOP OF RESERVOIR COURSE; RE: CIVIL
6. FILTER COURSE; 4" DEPTH BACK RUN GRAVEL
7. RESERVOIR COURSE; 6" DEPTH 3/4" CRUSHED STONE
8. METAL EDGE RESTRAINT ATTACHED TO GEOGRID SYSTEM; RE: SPECIFICATIONS
9. ADJACENT PLANTING; RE: PLANTING AND SOIL PLANS
10. COMPACTED SUBGRADE OR INFILTRATION SYSTEM BELOW; RE:CIVIL

NOTE:
1. REFER TO CIVIL FOR STORMWATER CALCULATIONS AND REQUIREMENTS

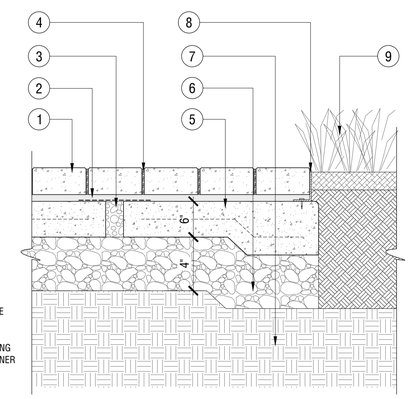


0 4" 8"
SCALE: 1 1/2" = 1'-0"

SECTION - UNIT PAVING TYPE 2 06
BP-NH.LWM-HS-06

1. BRICK UNIT PAVER RE: CONSTRUCTION SCHEDULE FOR SIZE, FINISH, AND COLOR, RE: CONSTRUCTION PLANS FOR PAVING LAYOUT
2. 3/4" BITUMINOUS SETTING BED WITH NEOPRENE MODIFIED ASPHALT ADHESIVE TACK COAT
3. 2" DIA. WEEP HOLES AT 8'-0" O.C.; FILL WITH GRAINAGE GRAVEL AND COVE WITH FILTER FABRIC. ENSURE POSITIVE DRAINAGE TO WEEP HOLE LOCATIONS
4. 3/16" POLYMERIC SAND SWEPT JOINT
5. REINFORCED CONCRETE SUBSLAB
6. COMPACTED AGGREGATE SUB-BASE
7. COMPACTED SUBGRADE
8. METAL EDGE RESTRAINT; RE: SPECIFICATIONS
9. ADJACENT PLANTING; RE: PLANTING AND SOIL PLANS

NOTE:
1. CONNECTION BETWEEN EDGE RESTRAINT SECTIONS TO UTILIZE MANUFACTURER`S SLIDING CONNECTOR SYSTEM
2. CORNERS: NOTCH BASE OF EDGING AND FORM A CONTINUOUS CORNER



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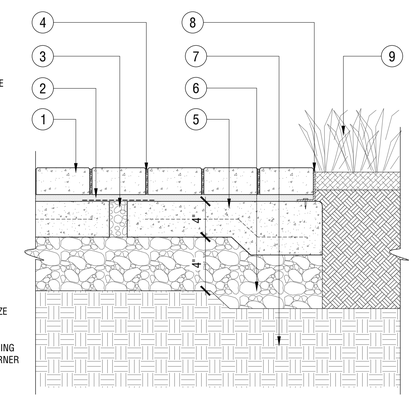
SCALE: 1 1/2" = 1'-0"

SECTION - UNIT PAVING TYPE 1B & 3 05
BP-NH.LWM-HS-03

1. BRICK UNIT PAVER RE: CONSTRUCTION SCHEDULE FOR SIZE, FINISH, AND COLOR, RE: CONSTRUCTION PLANS FOR PAVING LAYOUT
2. 3/4" BITUMINOUS SETTING BED WITH NEOPRENE MODIFIED ASPHALT ADHESIVE TACK COAT
3. 2" DIA. WEEP HOLES AT 8'-0" O.C.; FILL WITH GRAINAGE GRAVEL AND COVE WITH FILTER FABRIC. ENSURE POSITIVE DRAINAGE TO WEEP HOLE LOCATIONS
4. 3/16" POLYMERIC SAND SWEPT JOINT
5. REINFORCED CONCRETE SUBSLAB
6. COMPACTED AGGREGATE SUB-BASE
7. COMPACTED SUBGRADE
8. METAL EDGE RESTRAINT; RE: SPECIFICATIONS
9. ADJACENT PLANTING; RE: PLANTING AND SOIL PLANS

NOTE:
1. CONNECTION BETWEEN EDGE RESTRAINT SECTIONS TO UTILIZE MANUFACTURER`S SLIDING CONNECTOR SYSTEM
2. CORNERS: NOTCH BASE OF EDGING AND FORM A CONTINUOUS CORNER

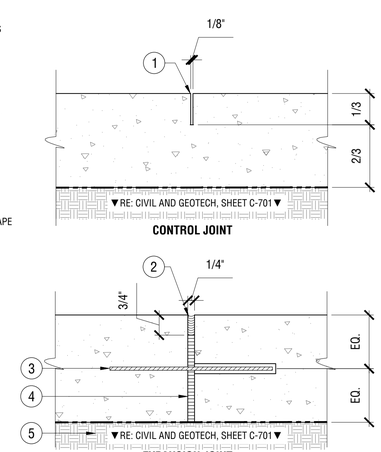


0 4" 8"
SCALE: 1 1/2" = 1'-0"

SECTION - UNIT PAVING TYPE 1A 04
BP-NH.LWM-HS-02

1. SAW CUT TO BE 1/3 OVERALL DEPTH OF PAVEMENT WHEN NO EXPANSION JOINT IS PRESENT, TYP.
2. 1/4" JOINT WITH ELASTOMERIC JOINT SEALANT
3. #4 9" STEEL DOWEL SPACED AT 36" O.C. WITH GREASED SLEEVE ON ONE END, TYP.
4. 1/4" THICK FOAM EXPANSION JOINT WITH SNAP CAP, TYP.
5. PREPARED SUBGRADE, RE: GEOTECH

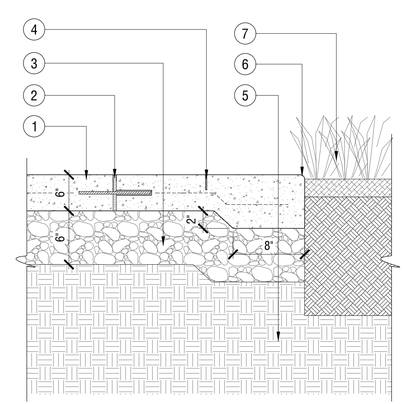
NOTES:
1. CONTRACTOR SHALL REFERENCE HARDSCAPE PLANS FOR JOINT TYPE AND LAYOUT.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF CONCRETE POURS, JOINT TYPE, AND LAYOUT FOR APPROVAL BY LANDSCAPE ARCHITECT.



0 2" 4"
SCALE: 3" = 1'-0"

SECTION - CONTROL JOINT AND EXPANSION JOINT TYPES 03
BP-NH.LWM-06

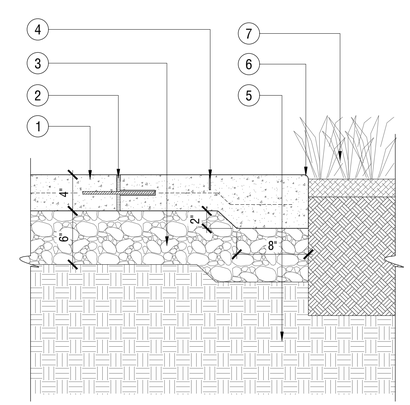
1. PEDESTRIAN RATED CONCRETE PAVING REINFORCED WITH #4 REBAR AT 18" OC; RE: CONSTRUCTION SCHEDULE FOR COLOR AND FINISH PER TYPE
2. SEALED EXPANSION JOINT; RE: PLANS FOR LOCATION; RE: DETAIL 03/L301
3. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
4. SAW CUT JOINT; RE:PLANS FOR LOCATION; RE: DETAIL 03/L301
5. PREPARED SUBGRADE; RE: GEOTECHNICAL REPORT
6. 1/2"R TOOLED EASED EDGE, AT EDGE CONTIONS ONLY
7. ADJACENT PLANTING - FINISHED GRADE TO BE HELD 1/2" BELOW TOP OF PAVING; RE: PLANTING PLANS FOR TYPE



0 4" 8"
SCALE: 1 1/2" = 1'-0"

SECTION - CONCRETE PAVING TYPE 2 02
BP-NH.LWM-HS-04

1. PEDESTRIAN RATED CONCRETE PAVING REINFORCED WITH #4 REBAR AT 18" OC; RE: CONSTRUCTION SCHEDULE FOR COLOR AND FINISH PER TYPE
2. SEALED EXPANSION JOINT; RE: PLANS FOR LOCATION; RE: DETAIL 03/L301
3. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
4. SAW CUT JOINT; RE:PLANS FOR LOCATION; RE: DETAIL 03/L301
5. PREPARED SUBGRADE; RE: GEOTECHNICAL REPORT
6. 1/2"R TOOLED EASED EDGE, AT EDGE CONTIONS ONLY
7. ADJACENT PLANTING - FINISHED GRADE TO BE HELD 1/2" BELOW TOP OF PAVING; RE: PLANTING PLANS FOR TYPE



0 4" 8"
SCALE: 1 1/2" = 1'-0"

SECTION - CONCRETE PAVING TYPE 1 01
BP-NH.LWM-HS-08

SITE PLAN REVIEW

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: AS SHOWN

CONSTRUCTION DETAILS

L301

Plotted By: Charity Chirung Sheet Set: NH-LWM PERMIT SET Layout: L301 Version: August 08, 2024 11:50:50am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L3-CONSTRUCTION DETAILS.dwg
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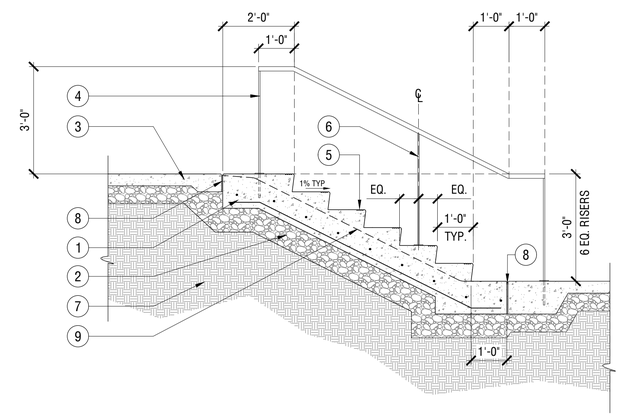
1. CAST-IN-PLACE REINFORCED CONCRETE STEPS. RISER HEIGHT PER CIVIL GRADING PLANS, CONTRACTOR TO VERIFY IN FIELD, RISER HEIGHT TO BE EQUAL FOR ALL TREADS, AND MIN. 5" TO MAX. 7"
2. COMPACTED AGGREGATE SUB-BASE, RE: CIVIL
3. ADJACENT CONCRETE PAVING, RE: CONSTRUCTION PLANS AND SCHEDULE
4. HANDRAIL TYPE 1 (FR-01), RE: CONSTRUCTION SCHEDULE AND TYP. DETAIL
5. 1/8" SAW CUT STAIR NOSING, TYP. REFER TO TYPICAL ENLARGEMENT DETAIL (01/L-302)
6. INTERMEDIATE HANDRAIL STANCHION
7. PREPARED SUBGRADE
8. 1/4" EXPANSION JOINT
9. FINISH GRADE BEYOND

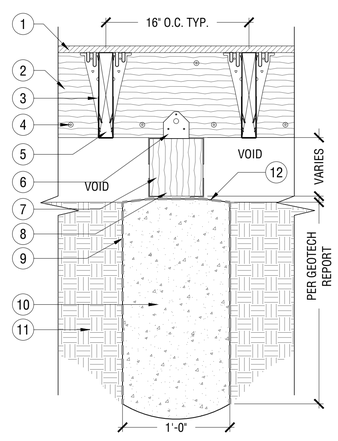
NOTE:
1. DETAIL FOR DESIGN INTENT ONLY, REFER TO CIVIL FOR SIZING, REINFORCING, AND SUBGRADE CONDITION
2. REFER TO CIVIL DRAWINGS FOR ALL GRADING AND DRAINAGE CONDITIONS, NOTIFY CIVIL ENGINEER AND LA WITH ANY DISCREPANCIES
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR LA AND STRUCTURAL REVIEW
4. REFER TO CONSTRUCTION PLAN FOR STAIR LAYOUT AND QUANTITY



SCALE: 1/2" = 1'-0"

SECTION - STAIR TYPE 1 04
BP-NH-LWM-HS-31

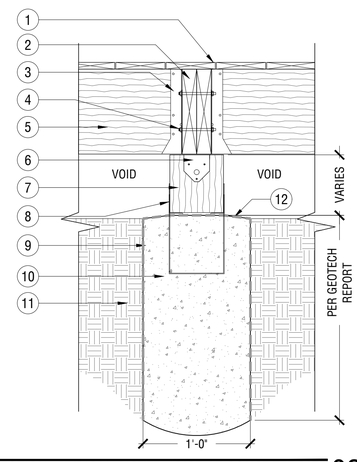
1. 5/4" X 6" KEBONY DECKING, INSTALL USING TOP-DOWN SMART-BIT SCREWS, ENSURE SCREWS ARE COUNTERSUNK
2. (2) 2 X 12 PRESSURE TREATED SISTERED BEAM
3. LU28 FACE MOUNT HANGER
4. GALVANIZED BOLT ASSEMBLY
5. 2 X 10 PRESSURE TREATED JOIST
6. BCS 2-2/4 POST CAPS
7. 4 X 4 PRESSURE TREATED WOOD POST SPACED PER PLANS
8. MPB44Z MOMENT POST BASE EMBEDDED IN CONCRETE PIER
9. SELF ADHERING ICE AND WATER MEMBRANE; RE: SPECS
10. REINFORCED CONCRETE PIER
11. COMPACTED SUB-GRADE
12. PROVIDE POSITIVE SLOPE AT TOP OF FOOTING AWAY FROM POST



SCALE: 1 1/2" = 1'-0"

SECTION - TYPICAL SISTER JOIST AT CONCRETE PIER 03
BP-NH-LWM-HS-43

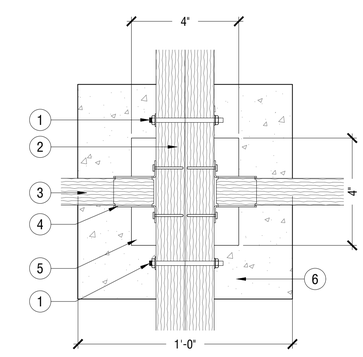
1. 5/4" X 6" KEBONY DECKING, INSTALL USING TOP-DOWN SMART-BIT SCREWS, ENSURE SCREWS ARE COUNTERSUNK
2. (2) 2 X 12 PRESSURE TREATED SISTERED BEAM
3. LU28 JOIST HANGER
4. 3/8" GALVANIZED BOLT ASSEMBLY WITH FLAT WASHER
5. 2 X 10 PRESSURE TREATED JOIST
6. BCS 2-2/4 POST TO BEAM ANCHOR; RE: SPECS
7. 4 X 4 PRESSURE TREATED WOOD POST SPACED PER PLANS
8. MPB44Z MOMENT POST BASE EMBEDDED IN CONCRETE PIER
9. SELF ADHERING ICE AND WATER MEMBRANE; RE: SPECS
10. REINFORCED CONCRETE PIER
11. COMPACTED SUB-GRADE
12. PROVIDE POSITIVE SLOPE AT TOP OF FOOTING AWAY FROM POST



SCALE: 1 1/2" = 1'-0"

SECTION - TYPICAL SISTER JOIST AT CONCRETE PIER 02
BP-NH-LWM-HS-41

1. 3/8" GALVANIZED BOLT ASSEMBLY WITH FLAT WASHER
2. 2 X 10 PRESSURE TREATED SISTER JOIST OR BEAM
3. PRESSURE TREATED JOIST
4. GALVANIZED JOIST HANGER
5. 4 X 4 PRESSURE TREATED POST
6. REINFORCED CONCRETE PIER



SCALE: 3" = 1'-0"

PLAN - TYPICAL POST AND BEAM AT CONCRETE PIER 01
BP-NH-LWM-HS-42

SITE PLAN REVIEW

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: AS SHOWN

CONSTRUCTION DETAILS

L302

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L302 Version: August 08, 2024 11:53:14am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L3-CONSTRUCTION DETAILS.dwg
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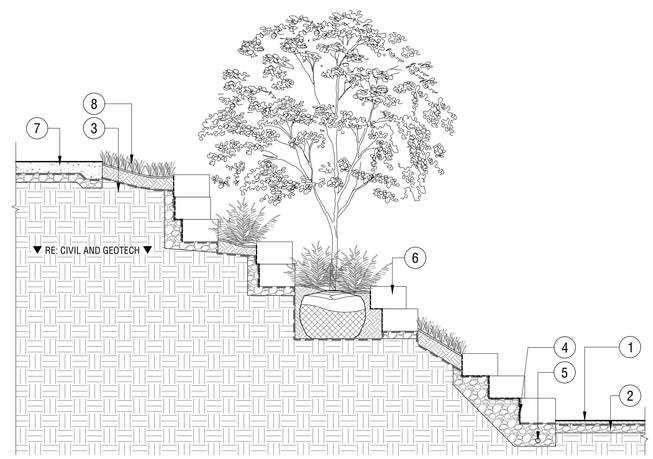
1. ADJACENT PAVING, RE: CONSTRUCTION PLANS
2. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
3. COMPACTED SUBGRADE; RE: GEOTECH
4. FILTER FABRIC. PROVIDE ALONG ENTIRE VERTICAL FACE OF BLOCKS
5. PERFORATED DRAIN PIPE
6. NATURAL STONE
7. ADJACENT PAVING; RE: CONSTRUCTION PLANS
8. PLANTING; RE: PLANTING PLANS



SCALE: 1/4" = 1'-0"

SECTION - STACKED STONE SLOPE WITH PLANTING 03
BP-NH-LWM-PA-18

1. REINFORCED CAST-IN-PLACE CONCRETE RETAINING WALL
2. ALL EXPOSED EDGES TO BE CHAMFERED, 1" TYP.
3. EXPANSION JOINT BETWEEN RETAINING WALL AND ADJACENT PAVEMENT
4. ADJACENT PAVING, REFER TO CONSTRUCTION PLANS
5. CRUSHED AGGREGATE, WRAP WITH FILTER FABRIC
6. 4" PERFORATED DRAIN PIPE; CONNECT TO LANDSCAPE DRAINAGE SYSTEM, RE: CIVIL
7. PREPARED SUBGRADE OR STRUCTURAL BACKFILL

NOTES:

1. REFER TO CONSTRUCTION PLAN FOR OVERALL WALL LAYOUT

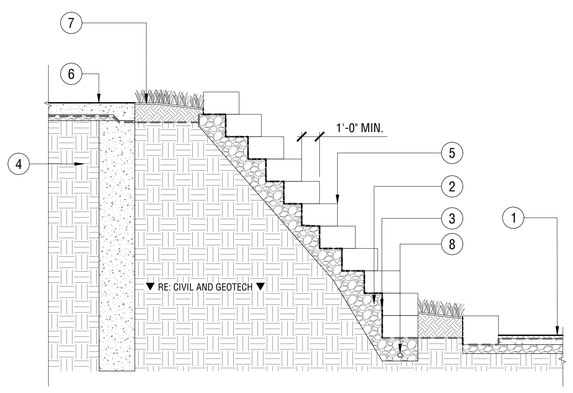
2. REFER TO CONSTRUCTION SCHEDULE AND SPECIFICATIONS FOR CONCRETE COLOR/FINISH

3. REINFORCING SHOWN FOR REFERENCE ONLY; CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL BY LA AND STRUCTURAL ENGINEER

4. WALL TO BE DESIGNED BY STRUCTURAL OR CIVIL ENGINEER.

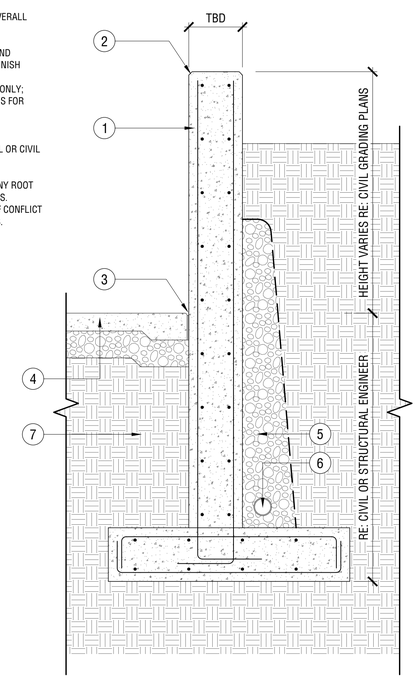
5. CONSTRUCTION SHALL NOT DAMAGE ANY ROOT SYSTEMS ADJACENT TO PROTECTED TREES. LANDSCAPE ARCHITECT TO BE NOTIFIED IF CONFLICT WITH WALL LAYOUT AND EXISTING TREES.

1. ADJACENT PAVING, RE: CONSTRUCTION PLANS
2. COMPACTED AGGREGATE SUB-BASE; RE: CIVIL
3. FILTER FABRIC. PROVIDE ALONG ENTIRE VERTICAL FACE OF BLOCKS
4. COMPACTED SUBGRADE; RE: GEOTECH
5. NATURAL STONE
6. ADJACENT PAVING; RE: CONSTRUCTION PLANS
7. ADJACENT PLANTING; RE: PLANTING PLANS
8. PERFORATED DRAIN PIPE



SCALE: 1/4" = 1'-0"

SECTION - STACKED STONE WALL 02
BP-NH-LWM-PA-16



SCALE: 3/4" = 1'-0"

SECTION - SITE WALL TYPE 1 01
BP-NH-LWM-HS-12

SITE PLAN REVIEW

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

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1	Site Plan Review	10/9/2023
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3	NOA Conformed	07/08/2024

DATE: 08.15.22

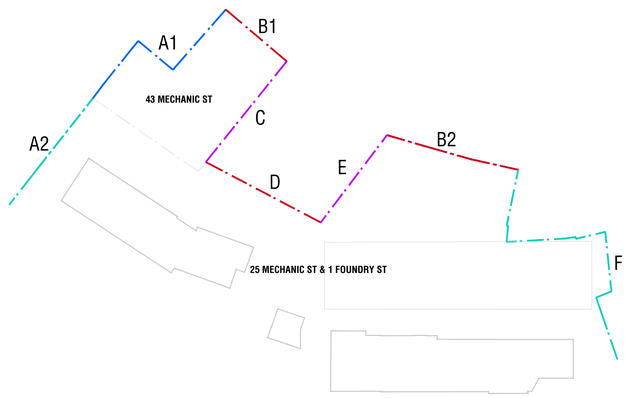
SCALE: AS SHOWN

CONSTRUCTION DETAILS

L303

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L303 Version: August 08, 2024 11:53:14am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L3-CONSTRUCTION DETAILS.dwg
5/18/2022 5:23:22 PM

PERIMETER LANDSCAPING



43 MECHANIC ST

Perimeter A1
*(applied for waiver) **
Area of Planted Frontage 1750 sf

Shade Trees
Required: 1750/300SF 6
Provided: 6
Understories Trees (applied for waiver)
Provided: 5

Perimeter B1 (Mechanic St. Frontage)
Length of Frontage 100'

Shade Trees
Required: 100' x 15'/600SF 3
Provided: 3
Understories Trees & Shrubs
Required: (100' x 15'/600SF) x 5 13
Provided: 13

Perimeter C
*(applied for waiver) **
Area of Planted Frontage 1451 sf

Shade Trees (applied for waiver)
Provided: 2
Understories Trees (applied for waiver)
Provided: 4

25 MECHANIC ST & 1 FOUNDRY ST

Perimeter A2
*(applied for waiver) **
Area of Planted Frontage 968 sf

Perimeter B2 (Mechanic St. Frontage)
Length of Frontage 170'

Shade Trees
Required: 170' x 15'/600SF 4
Provided: 4
Understories Trees & Shrubs
Required: (170' x 15'/600SF) x 5 21
Provided: 21

Perimeter D
*(applied for waiver) **
Length of Frontage 158'

Shade Trees
Required: 158' x 15'/300SF 8
Provided: 8
Understories Trees (applied for waiver)
Provided: 1

Perimeter E
*(applied for waiver) **
Area of Planted Frontage 667 sf

Perimeter F
*(applied for waiver) **
Area of Planted Frontage 2501 sf

Shade Trees (applied for waiver)
Provided: 2
Understories Trees (applied for waiver)
Provided: 3

PLANTING SCHEDULE

TREES/UNDERSTORIES	CODE	BOTANICAL / COMMON NAME	CALIPER	FORM	COUNT	REMARKS
	AR	ACER RUBRUM / RED MAPLE	2.5" - 3" MIN.	STANDARD	11	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM. AT MATURITY MUST HAVE A TRUNK DIAMETER OF AT LEAST 12 INCHES, MEASURED 4 FEET ABOVE THE GROUND SURFACE.
	AS	ACER SPICATUM / MOUNTAIN MAPLE	2.5" - 3" MIN.	MULTISTEM, STANDARD	18	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	BN1	BETULA NIGRA / RIVER BIRCH	2.5" - 3" MIN.	MULTISTEM	4	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	BP1	BETULA PAPYRIFERA / PAPER BIRCH	2.5" - 3" MIN.	STANDARD	7	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	BP2	BETULA POPULIFOLIA / GRAY BIRCH	2.5" - 3" MIN.	MULTISTEM, STANDARD	6	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	CC	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	2.5" - 3" MIN.	STANDARD	8	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	GT	GLEDITSIA TRIACANTHS INERMIS / THORNLESS HONEY LOCUST	2.5" - 3" MIN.	STANDARD	8	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM. AT MATURITY MUST HAVE A TRUNK DIAMETER OF AT LEAST 12 INCHES, MEASURED 4 FEET ABOVE THE GROUND SURFACE.
	PP	PRUNUS PENSYLVANICA / PIN CHERRY	2.5" - 3" MIN.	STANDARD	6	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
	SN	SALIX NIGRA / BLACK WILLOW	2.5" - 3" MIN.	STANDARD	4	MATCHED SPECIMENS, CROWN AND BRANCHES TYPICAL OF SPECIES. PROVIDE BELOW GRADE FREE ANCHOR SYSTEM.
UNDERSTORIES	CODE	BOTANICAL / COMMON NAME	CALIPER	FORM	COUNT	REMARKS
	AC	AMELANCHIER CANADENSIS / SHADOW SERVICEBERRY	1" - 2"	MULTISTEM	15	MATCHED SPECIMEN
	BN2	BETULA NIGRA / RIVER BIRCH	1" - 2"	MULTISTEM	32	MATCHED SPECIMEN
	CE	CORNUS X EDDIE'S WHITE WONDER / WHITE WONDER DOGWOOD	1" - 2"	MULTISTEM	9	MATCHED SPECIMEN
GROUND COVERS	CODE	PLANTING MIX	SPACING	FORM		REMARKS
	PA 1	PLANTING MIX 1 - WILDLIFE SEED MIX	PER SUPPLIER	-		NEW ENGLAND "CONSERVATION/WILDLIFE" SEED MIX, MANUFACTERED BY NEW ENGLAND WETLAND PLANTS, INC. APPLY SEED MIX AT A RATE OF 25LBS/ACRE
	PA 2	PLANTING MIX 2 - NO-MOW SEED MIX	PER SUPPLIER	-		PRAIRIE NURSERY STANDARD NO-MOW SEED MIX PRODUCT, MANUFACTURED BY PRAIRIE NURSERY,INC. APPLY SEED MIX AT A RATE OF 300LBS/ACRE
	PA 3	PLANTING MIX 3 - MILL YARD	18" - 24" O.C.	-		SPECIES INCLUDE: *Carex pensylvanica; Limonium carolinianum; Solidago bicolor; Carex stricta; Schizachyrium-scoparium; Calamagrostis canadensis; Baptisia australis; Panicum-virgatum;* OR SIMILAR NATIVES IN 1-2 GAL.
	PA 4	PLANTING MIX 4 - FRONTAGE	18" - 24" O.C.	-		60% FLOWERING PLANTS, 40% EVERGREEN. SPECIES INCLUDE: *Aster novae-angliae; Kalmia angustifolia; Rosa virginiana; Juniperus communis;Taxus canadensis;* OR SIMILAR NATIVES. ALL SHRUBS TO BE 24"-30"MIN IN HEIGHT AND/OR 18" - 24" INCHES IN SPREAD AT INSTALLATION.
	PA 5	PLANTING MIX 5 - BIOSWALE SEED MIX	PER SUPPLIER	-		PRAIRIE NURSERY BIOSWALE SEED MIX PRODUCT, MANUFACTURED BY PRAIRIE NURSERY,INC. APPLY SEED MIX AT A RATE OF 10LBS/ACRE
	PA 6	PLANTING MIX 6 - WETLAND SEED MIX	PER SUPPLIER	-		NEW ENGLAND WETMIX "WETLAND" SEED MIX PRODUCT, MANUFACTERED BY NEW ENGLAND WETLAND PLANTS, INC. APPLY SEED MIX AT A RATE OF 18LBS/ACRE
	PA 7	PLANTING MIX 7 - SCREENING SHRUB	72" O.C.	-		SPECIES INCLUDE: *Rhododendron macrophyllum;* OR SIMILAR NATIVES IN 5 GAL. ALL SHRUBS TO BE 4' IN HEIGHT AND/OR 4' IN SPREAD AT INSTALLATION.

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NOT FOR CONSTRUCTION

1 FOUNDRY ST.
LEBANON, NH

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PROJECT: NH-LWM

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1	Site Plan Review	10/9/2023
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3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE:

PLANTING SCHEDULE AND NOTES

L600

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L600 Version: August 08, 2024 11:54:11am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L6-PLANTING PLANS.dwg
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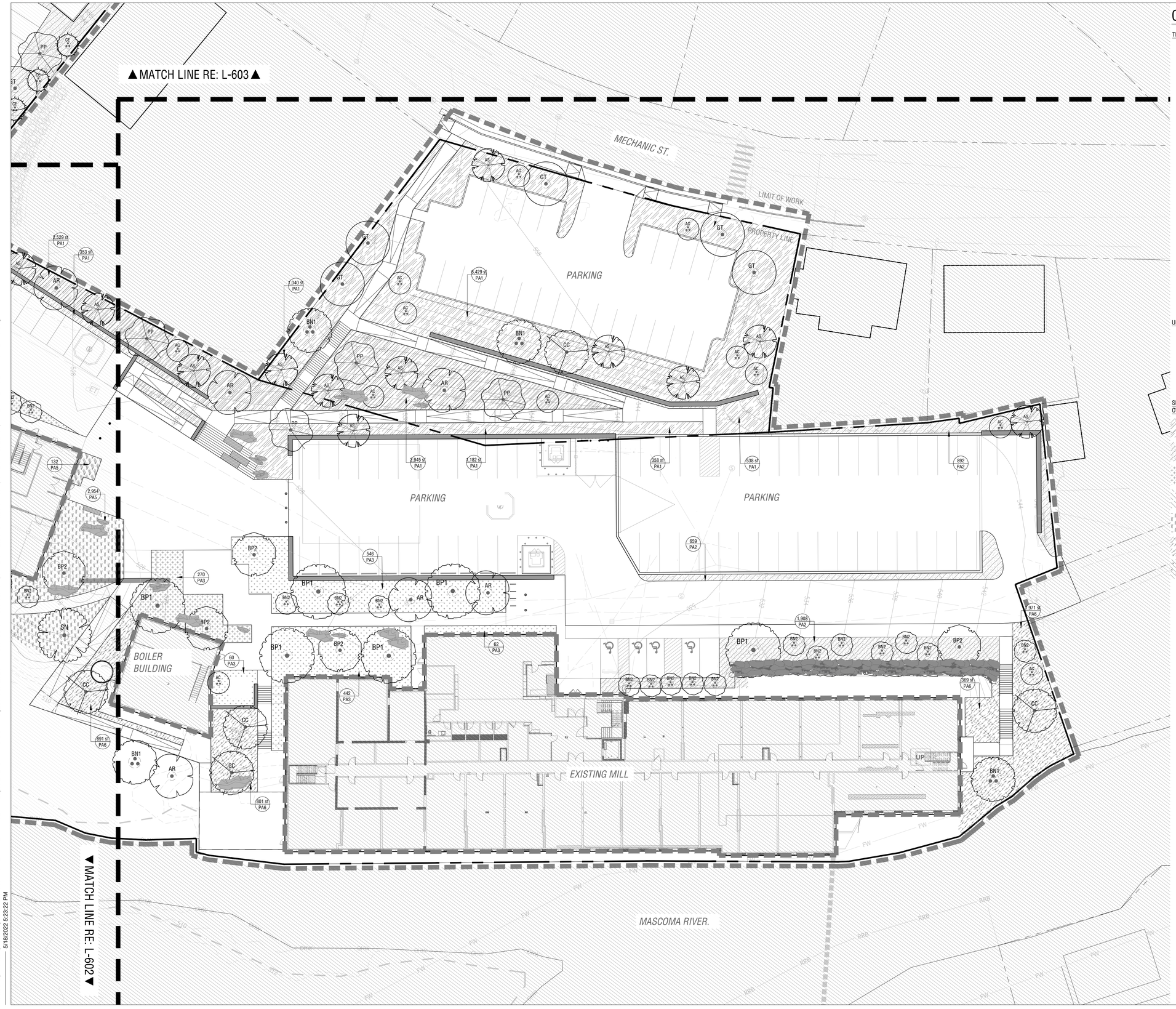

QUICK REFERENCE LEGEND

TREES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AR	ACER RUBRUM / RED MAPLE	2.5" - 3" MIN.
	AS	ACER SPICATUM / MOUNTAIN MAPLE	2.5" - 3" MIN.
	BN	BETULA NIGRA / RIVER BIRCH	2.5" - 3" MIN.
	BP1	BETULA PAPYRIFERA / PAPER BIRCH	2.5" - 3" MIN.
	BP2	BETULA POPULIFOLIA / GRAY BIRCH	2.5" - 3" MIN.
	CC	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	2.5" - 3" MIN.
	GT	GLEDITSIA TRIACANTHS INERMIS / THORNLESS HONEY LOCUST	2.5" - 3" MIN.
	PP	PRUNUS PENSYLVANICA / PIN CHERRY	2.5" - 3" MIN.
	SN	SALIX NIGRA / BLACK WILLOW	2.5" - 3" MIN.

UNDERSTORIES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AC	AMELANCHIER CANADENSIS / SHADOW SERVICEBERRY	1" - 2"
	BN2	BETULA NIGRA / RIVER BIRCH	1" - 2"
	CE	CORNUS X EDDIE'S WHITE WONDER / WHITE WONDER DOGWOOD	1" - 2"

SHRUB/GROUNDCOVER AREAS	CODE	BOTANICAL / COMMON NAME	CONTAINER
	PA 1	PLANTING MIX 1	PER SUPPLIER
	PA 2	PLANTING MIX 2	PER SUPPLIER
	PA 3	PLANTING MIX 3	18" - 24" O.C.
	PA 4	PLANTING MIX 4	18" - 24" O.C.
	PA 5	PLANTING MIX 5	PER SUPPLIER
	PA 6	PLANTING MIX 6	PER SUPPLIER
	PA 7	PLANTING MIX 7	72" O.C.

SITE PLAN REVIEW

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535 Albany Street | 405
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603.442.9333| T

LANDSCAPE
OJB Landscape Architecture
One Bowdoin Square, Suite 801
Boston, MA 02114
857.233.5171 | T

NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
1	Site Plan Review	10/9/2023
2	NOA Conformed	01/25/2024
3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 20'-0"

PLANTING PLAN

L601

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L601 Version: August 08, 2024 11:50:40am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L6-PLANTING PLANS.dwg
5/18/2022 5:23:22 PM

QUICK REFERENCE LEGEND

TREES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AR	ACER RUBRUM / RED MAPLE	2.5" - 3" MIN.
	AS	ACER SPICATUM / MOUNTAIN MAPLE	2.5" - 3" MIN.
	BN	BETULA NIGRA / RIVER BIRCH	2.5" - 3" MIN.
	BP1	BETULA PAPYRIFERA / PAPER BIRCH	2.5" - 3" MIN.
	BP2	BETULA POPULIFOLIA / GRAY BIRCH	2.5" - 3" MIN.
	CC	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	2.5" - 3" MIN.
	GT	GLEDITSIA TRIACANTHS INERMIS / THORNLESS HONEY LOCUST	2.5" - 3" MIN.
	PP	PRUNUS PENSYLVANICA / PIN CHERRY	2.5" - 3" MIN.
	SN	SALIX NIGRA / BLACK WILLOW	2.5" - 3" MIN.

UNDERSTORIES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AC	AMELANCHIER CANADENSIS / SHADOW SERVICEBERRY	1" - 2"
	BN2	BETULA NIGRA / RIVER BIRCH	1" - 2"
	CE	CORNUS X EDDIE'S WHITE WONDER / WHITE WONDER DOGWOOD	1" - 2"

SHRUB/GROUNDCOVER AREAS	CODE	BOTANICAL / COMMON NAME	CONTAINER
	PA 1	PLANTING MIX 1	PER SUPPLIER
	PA 2	PLANTING MIX 2	PER SUPPLIER
	PA 3	PLANTING MIX 3	18" - 24" O.C.
	PA 4	PLANTING MIX 4	18" - 24" O.C.
	PA 5	PLANTING MIX 5	PER SUPPLIER
	PA 6	PLANTING MIX 6	PER SUPPLIER
	PA 7	PLANTING MIX 7	72" O.C.

SITE PLAN REVIEW

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LEBANON, NH

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PROJECT: NH-LWM

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3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 20'-0"

PLANTING PLAN

L602

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L602 Version: August 08, 2024 11:52:52am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L6-PLANTING PLANS.dwg
5/18/2022 5:23:22 PM

QUICK REFERENCE LEGEND

TREES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AR	ACER RUBRUM / RED MAPLE	2.5" - 3" MIN.
	AS	ACER SPICATUM / MOUNTAIN MAPLE	2.5" - 3" MIN.
	BN	BETULA NIGRA / RIVER BIRCH	2.5" - 3" MIN.
	BP1	BETULA PAPYRIFERA / PAPER BIRCH	2.5" - 3" MIN.
	BP2	BETULA POPULIFOLIA / GRAY BIRCH	2.5" - 3" MIN.
	CC	CARPINUS CAROLINIANA / AMERICAN HORNBEAM	2.5" - 3" MIN.
	GT	GLEDITSIA TRIACANTHS INERMIS / THORNLESS HONEY LOCUST	2.5" - 3" MIN.
	PP	PRUNUS PENSYLVANICA / PIN CHERRY	2.5" - 3" MIN.
	SN	SALIX NIGRA / BLACK WILLOW	2.5" - 3" MIN.

UNDERSTORIES	CODE	BOTANICAL / COMMON NAME	CONTAINER
	AC	AMELANCHIER CANADENSIS / SHADOW SERVICEBERRY	1" - 2"
	BN2	BETULA NIGRA / RIVER BIRCH	1" - 2"
	CE	CORNUS X EDDIE'S WHITE WONDER / WHITE WONDER DOGWOOD	1" - 2"

SHRUB/GROUNDCOVER AREAS	CODE	BOTANICAL / COMMON NAME	CONTAINER
	PA 1	PLANTING MIX 1	PER SUPPLIER
	PA 2	PLANTING MIX 2	PER SUPPLIER
	PA 3	PLANTING MIX 3	18" - 24" O.C.
	PA 4	PLANTING MIX 4	18" - 24" O.C.
	PA 5	PLANTING MIX 5	PER SUPPLIER
	PA 6	PLANTING MIX 6	PER SUPPLIER
	PA 7	PLANTING MIX 7	72" O.C.

SITE PLAN REVIEW

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LEBANON, NH

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PROJECT: NH-LWM

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DATE: 08.15.22

SCALE: 1" = 20'-0"

PLANTING PLAN

L603

Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L603 Version: August 08, 2024 11:52:52am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L6-PLANTING PLANS.dwg
5/18/2022 5:23:22 PM

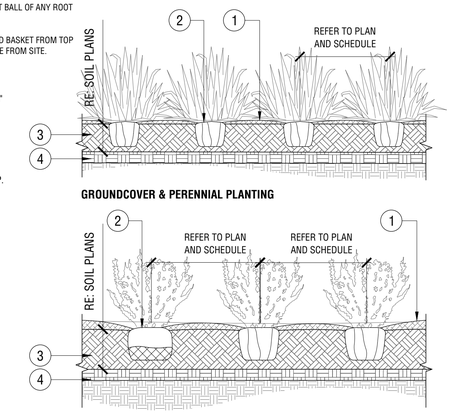
Plotted By: Charity Cheung Sheet Set: NH-LWM PERMIT SET Layout: L701 Version: August 08, 2024 11:53:32am Stored: T:\NH-LWM-Lebanon Woolen Mill\NH-LWM-SHEETS\NH-LWM-L7-PLANTING DETAILS.dwg
5/18/2022 5:23:22 PM

NOTES:

A. FOR CONTAINER: LOOSEN ROOT BALL OF ANY ROOT BOUND PLANTS

B. FOR B&B: REMOVE BURLAP AND BASKET FROM TOP 2/3 OF ROOT BALL AND REMOVE FROM SITE.

1. 3" MULCH LAYER, TYP.
2. TOP OF ROOT BALL TO BE 1" ABOVE SOIL MIX, TYP.
3. PLANTING MIX, RE: SOIL PLANS
4. PREPARED SUBGRADE, TILLED TO 4"-6" DEPTH, TYP.

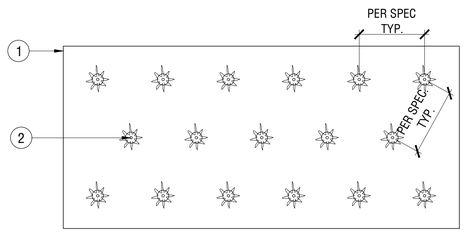


GROUNDCOVER & PERENNIAL PLANTING

0 1' 2'
SCALE: 1/2" = 1'-0"

DETAIL - SHRUB AND PERENNIAL PLANTING 03
BP-NH.LWM-PA-07

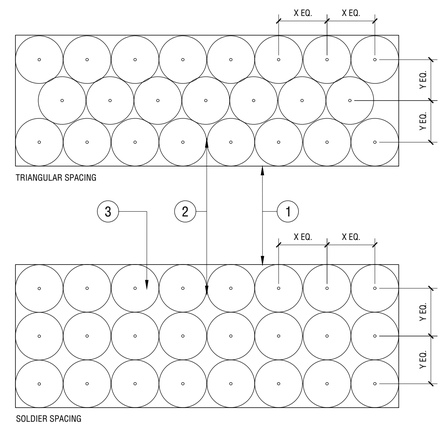
1. EDGE OF PLANTING BED OR ADJACENT HARDSCAPE
2. PLUGS - PER SPECIFICATION



SCALE: NTS

PLAN - PLUG LAYOUT 05
BP-NH.LWM-PA-12

1. EDGE OF PLANTING BED OR ADJACENT HARDSCAPE
2. PLANT SPACING AS PER PLANS
3. ALTERNATION SEQUENCE WHEN TWO PLANT SPECIES OCCUR IN THE SAME PLANTING AREA

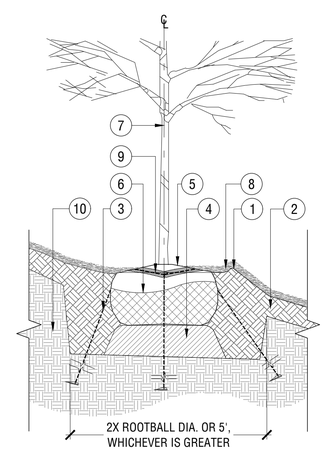


X AND Y = ON CENTER SPACING
RE: PLANTING PLANS

0 1' 4'
SCALE: 1/4" = 1'-0"

PLAN - SHRUB AND GROUND COVER SPACING, TYPICAL 04
BP-NH.LWM-PA-01

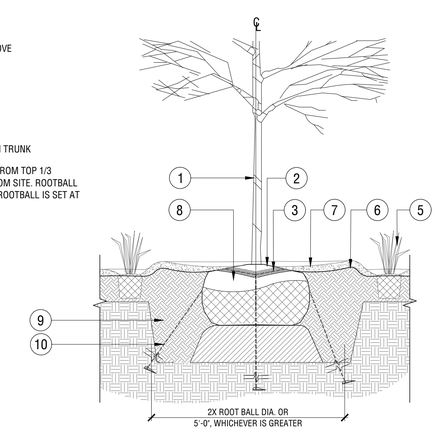
1. 6" BERM AND WATERING SAUCER
2. PLANTING MIX
3. PLATIPUS ANCHOR SYSTEM
4. COMPACTED SUBGRADE MOUND FOR DRAINAGE.
5. TOP OF ROOT BALL TO BE 2" ABOVE SPECIFIED SOIL MIX. ROOT FLARE TO BE EXPOSED BEFORE ROOTBALL IS SET AT FINISH GRADE
6. REMOVE BURLAP AND BASKET FROM TOP 1/3 OF ROOTBALL OR SIDES OF BOX AND REMOVE FROM SITE.
7. TREE TRUNK
8. 3" MULCH LAYER NOT TO TOUCH TRUNK
9. ANCHOR MAT
10. UNDISTURBED SUBGRADE



0 1'-4' 2'-8'
SCALE: 3/8" = 1'-0"

DETAIL - TREE PLANTING ON SLOPE 02
BP-NH.LWM-PA-05

1. TREE TRUNK
2. TOP OF ROOT BALL TO BE 2" ABOVE SPECIFIED MIX
3. ANCHOR MAT, RE: SPECS
5. ADJACENT PLANTING
6. 3" EARTH SAUCER
7. 3" MULCH LAYER NOT TO TOUCH TRUNK
8. REMOVE BURLAP AND BASKET FROM TOP 1/3 OF ROOT BALL AND REMOVE FROM SITE. ROOTBALL FLARE TO BE EXPOSED BEFORE ROOTBALL IS SET AT FINISH GRADE
9. PLANTING MIX, RE: SPECS
10. PLATIPUS ANCHOR SYSTEM RE: SPECS



0 1'-4' 2'-8'
SCALE: 3/8" = 1'-0"

DETAIL - TREE PLANTING IN LANDSCAPE AREA 01
BP-NH.LWM-PA-04

SITE PLAN REVIEW

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OJB Landscape Architecture
One Bowdoin Square, Suite 801
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857.233.5171 | T

NOT FOR CONSTRUCTION

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: NH-LWM

No.	Description	Date
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3	NOA Conformed	07/08/2024

DATE: 08.15.22

SCALE: 1" = 20'-0"

PLANTING DETAILS

L701

Refer to Lighting Fixture Schedule dated 10-6-2023 For all fixture types, manufacturer data, CCT, lumen output, and fixture loads.

SITE PLAN REVIEW

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LIGHTING
LAM Partners
84 Sherman Street
Cambridge, MA 02140
617.354.4502 | T

1 FOUNDRY ST.

LEBANON, NH

N

PROJECT: 2125

DATE: 8.8.2024

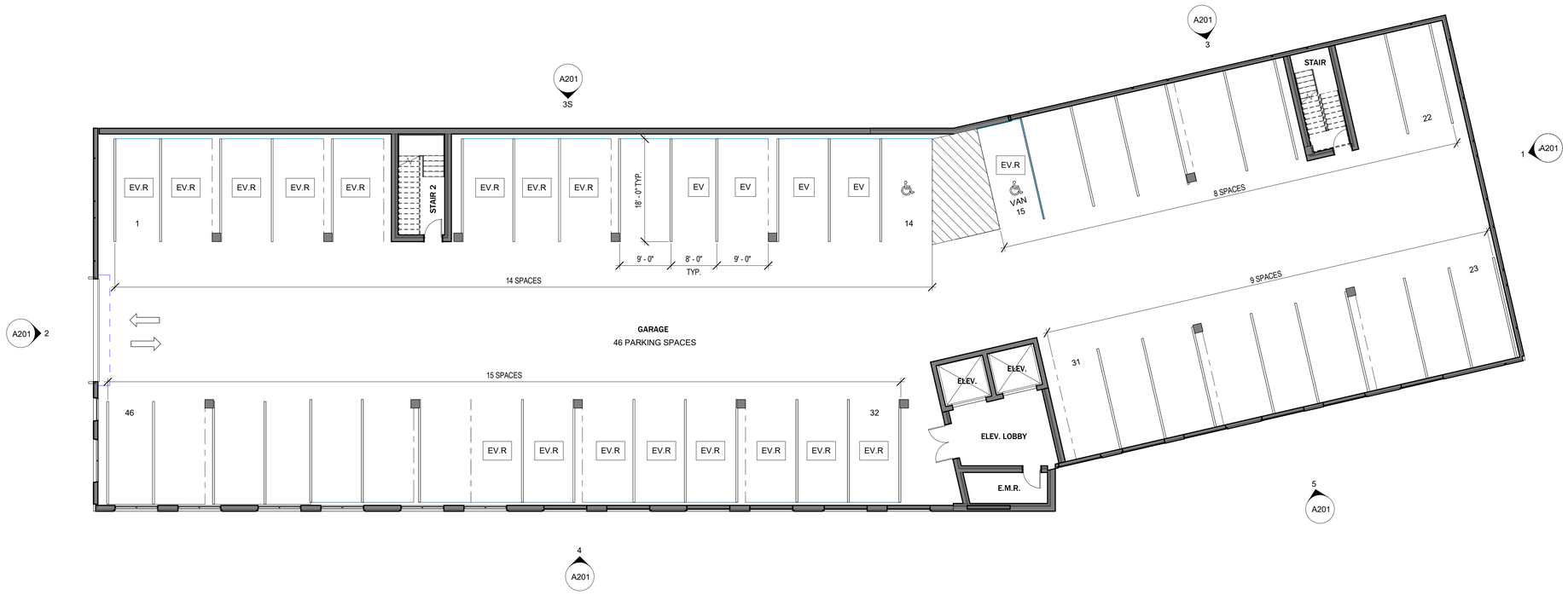
SCALE: 1" = 25'

Photometric Plan

SL101

5/18/2022 5:23:22 PM

Not for bidding or construction unless fully incorporated into contract documents by Architect and/or Engineer.



1 BLDG 3 - LEVEL 0_ Copy 1
3/32" = 1'-0"

SITE PLAN REVIEW

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BUILDING 3

LEBANON, NH

LWM RESIDENTIAL LLC

N

PROJECT: 2125

No.	Description	Date
1	PLANNING COMMENTS	10.17.22
2	FSPR AMENDMENT SUBMISSION	10.09.23
3	FSPR REVISED HYPRID LAYOUT	11.07.23
4	FSPR RE-SUBMISSION	12.06.23
5	NOA CONFORMED	01.25.24
6	SPR AMENDMENT 2	08.12.24

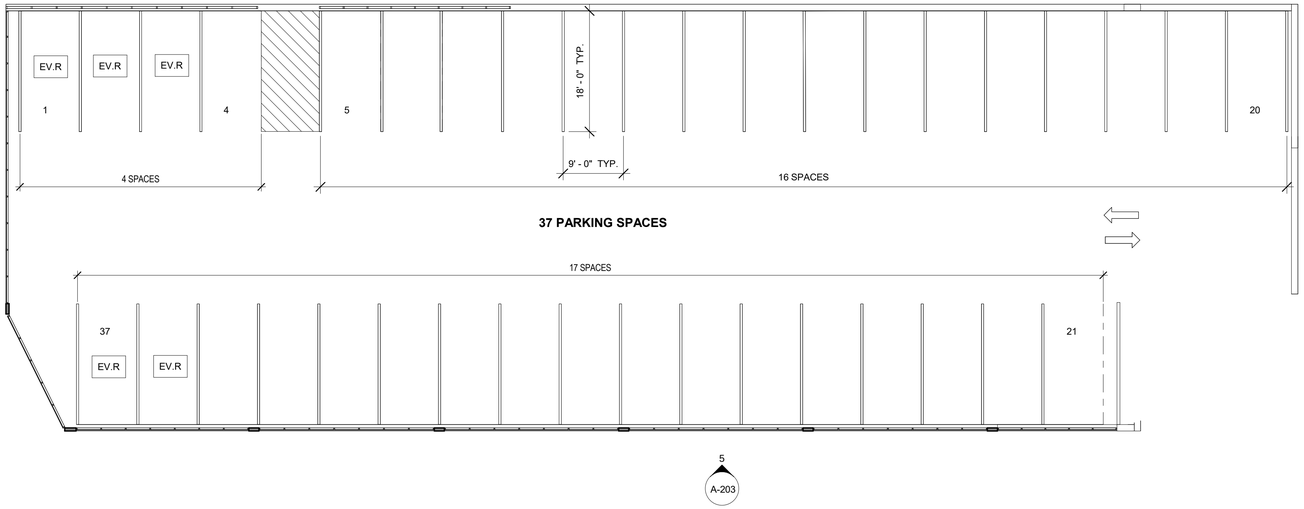
DATE: 08.15.22

SCALE: 3/32" = 1'-0"

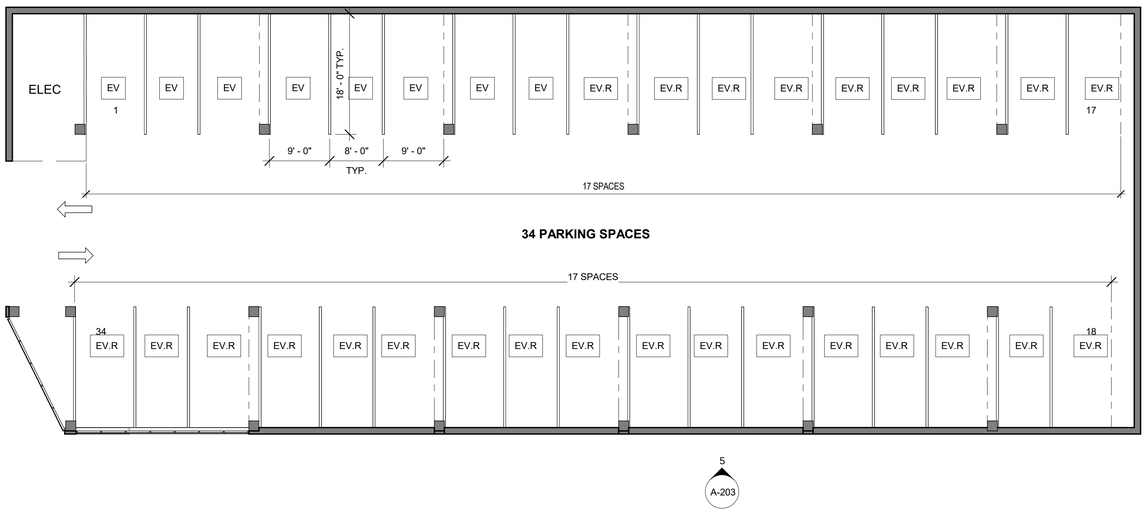
PARKING PLAN - BUILDING 3

A101

10/5/2023 3:16:47 PM



2 PARKING GARAGE - LEVEL 2
3/32" = 1'-0"



1 PARKING GARAGE - LEVEL 1
3/32" = 1'-0"

8/10/2024 5:52:23 PM

SITE PLAN REVIEW

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LEBANON, NH

LWM RESIDENTIAL LLC

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PROJECT: 2125

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DATE: 08.12.24

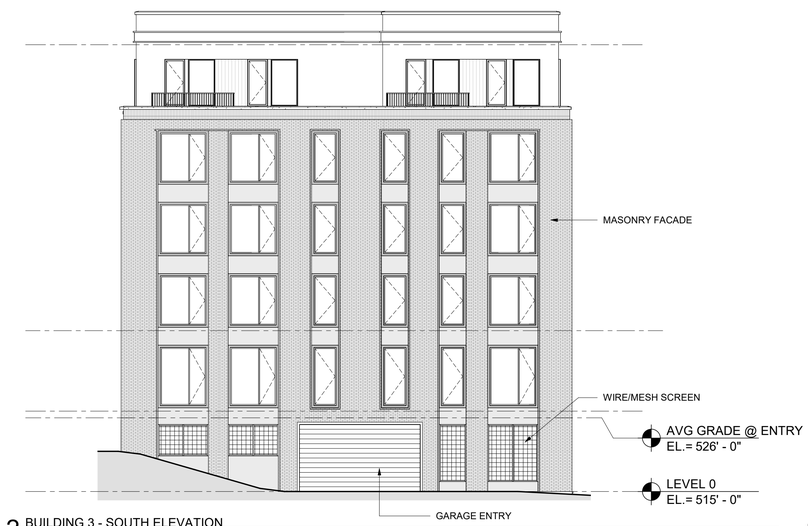
SCALE: 3/32" = 1'-0"

PARKING GARAGE PLANS

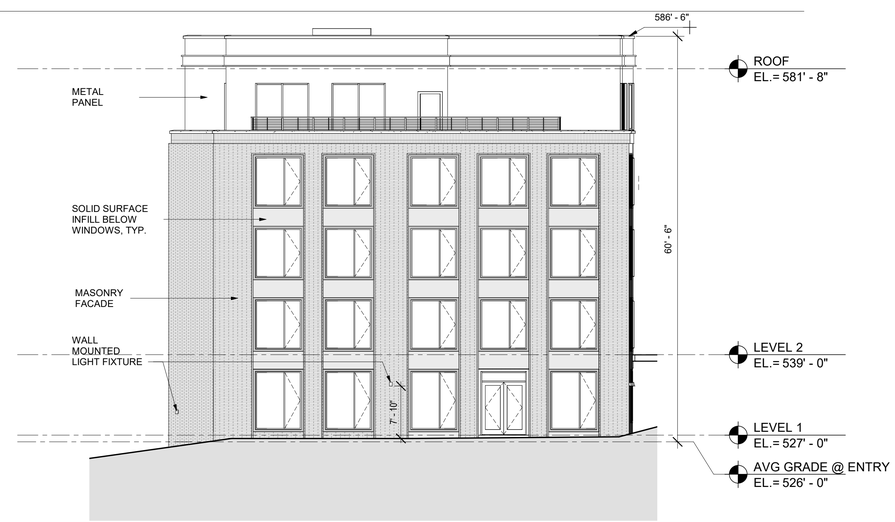
A102

4 BUILDING 3 - EAST ELEVATION
3/32" = 1'-0"

3 SPR BUILDING 3 - WEST ELEVATION A
3/32" = 1'-0"



2 BUILDING 3 - SOUTH ELEVATION
3/32" = 1'-0"



1 BUILDING 3 - NORTH ELEVATION
3/32" = 1'-0"

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DATE: 08.15.22

SCALE: 3/32" = 1'-0"

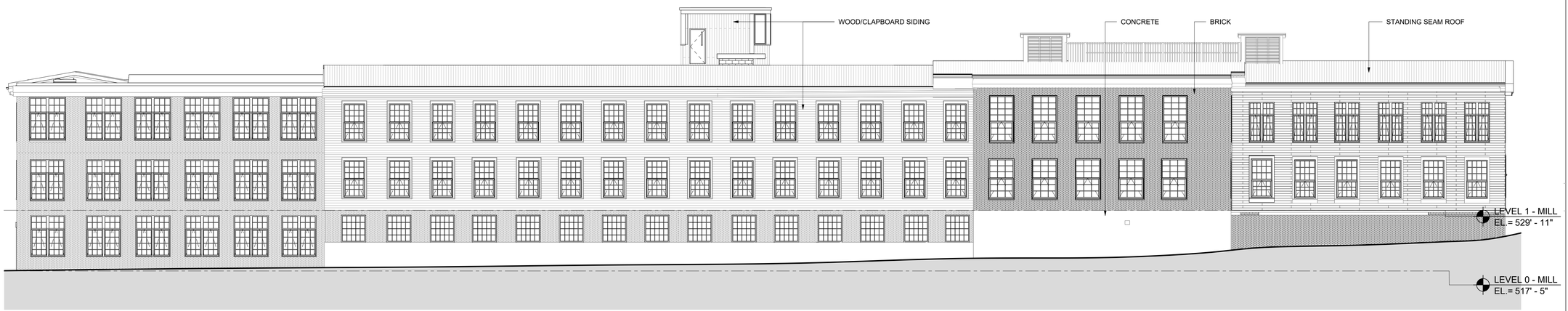
BUILDING ELEVATIONS - BUILDING 3

A201

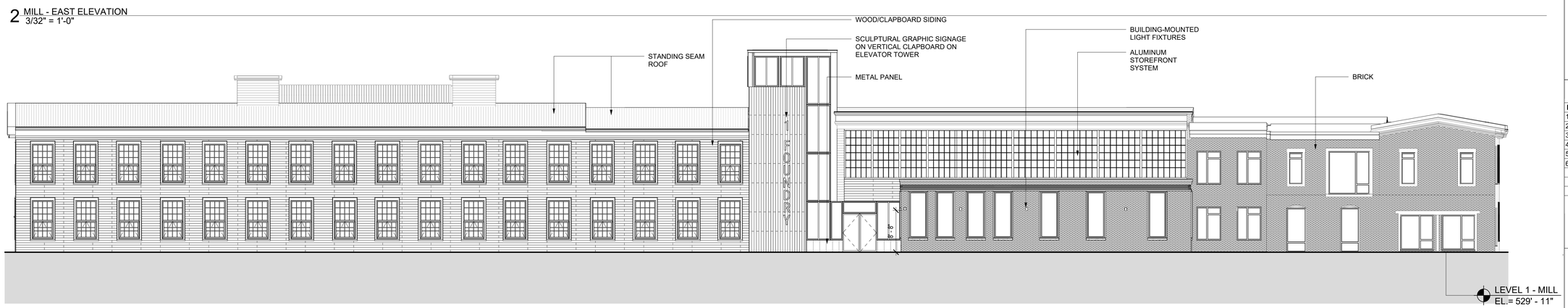
10/6/2023 4:37:22 PM

4 MILL - SOUTH ELEVATION
3/32" = 1'-0"

3 MILL - NORTH ELEVATION
3/32" = 1'-0"



2 MILL - EAST ELEVATION
3/32" = 1'-0"



1 MILL - WEST ELEVATION
3/32" = 1'-0"

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5	NOA CONFORMED	01.25.24
6	SPR AMENDMENT 2	08.12.24

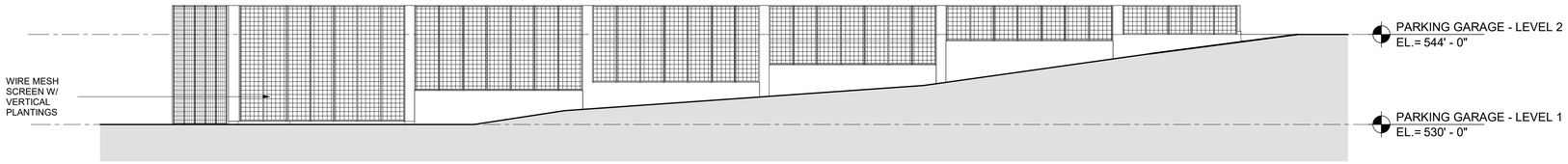
DATE: 08.15.22

SCALE: As indicated

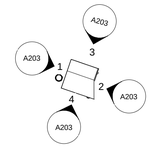
EXISTING MILL ELEVATIONS

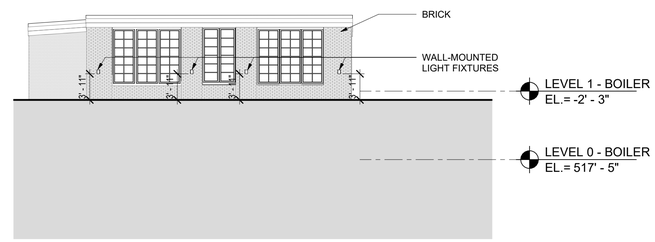
A202

8/9/2024 4:48:44 PM

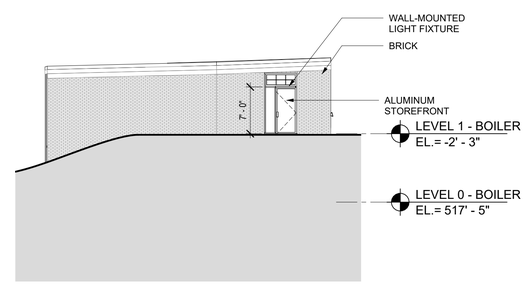


5 PARKING GARAGE ELEVATION
3/32" = 1'-0"

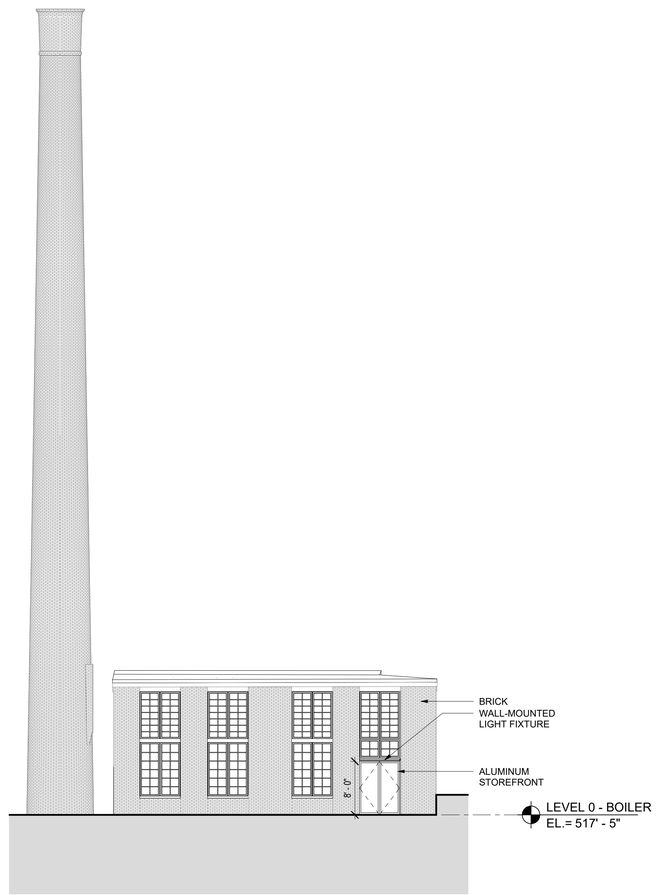




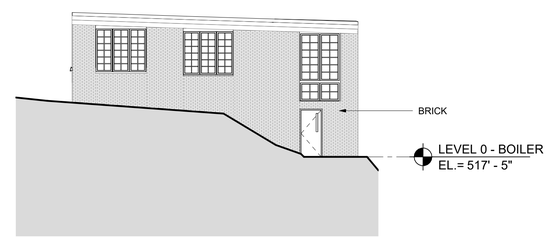
3 BOILER BUILDING - WEST ELEVATION
3/32" = 1'-0"



2 BOILER BUILDING - NORTH ELEVATION
3/32" = 1'-0"



4 BOILER BUILDING - EAST ELEVATION
3/32" = 1'-0"



1 BOILER BUILDING - SOUTH ELEVATION
3/32" = 1'-0"

SITE PLAN REVIEW

RODE
535 Albany Street | 405
Boston, MA 02118
617.422.0090 | T
rodearchitects.com

Design Team

SURVEY
Vive Libre Geomatics
P.O. Box 1093
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Engineering Ventures, PC
85 Mechanic St Suite e2-3
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LANDSCAPE
OJB Landscape Architects
One Bowdoin Square, Suite 801
Boston, MA 02114
857.444.8675 | T

1 FOUNDRY ST.

LEBANON, NH

LWM RESIDENTIAL LLC

N

PROJECT:

No.	Description	Date
1	PLANNING COMMENTS	10.17.22
2	FSPR AMENDMENT SUBMISSION	10.09.23
3	FSPR REVISED HYPRID LAYOUT	11.07.23
4	FSPR RE-SUBMISSION	12.06.23
5	NOA CONFORMED	01.25.24
6	SPR AMENDMENT 2	08.12.24

DATE: 08.15.22

SCALE: As indicated

BUILDING 2 & BOILER BUILDING ELEVATIONS

A203

8/9/2024 5:05:09 PM

LEBANON WOOLEN MILL

CITY OF LEBANON, GRAFTON COUNTY, NEW HAMPSHIRE

DRAINAGE ANALYSIS

NOVEMBER 23, 2022
REVISED: AUGUST 12, 2023

Prepared For:

LWM RESIDENTIAL, LLC
1 Guyenne Rd.
Wilmington, DE 19807

Prepared By:

ENGINEERING VENTURES PC
85 Mechanic Street, Suite E2-3
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EV Project # 22122

STATE OF NEW HAMPSHIRE
NICHOLAS A. FIORE
No. 13286
LICENSED
PROFESSIONAL ENGINEER

ENGINEERING VENTURES PC

Burlington, VT · Lebanon, NH · Schenectady, NY

LEBANON WOOLEN MILL

CITY OF LEBANON, GRAFTON COUNTY, NEW HAMPSHIRE

DRAINAGE ANALYSIS

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ENGINEERING VENTURES PC

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Lebanon Woolen Mill
1 Foundry Street, Lebanon, NH

Project Stormwater Narrative

EV Project # 22122
November 23, 2022
Revised: August 12, 2024

I Introduction

This project will redevelop the existing Lebanon Woolen Mill complex to accommodate a total of 155 residential units in a mixture of studio, 1-bedroom, and 2-bedroom apartments. The development encompasses two parcels: Lot 91-263 a 4.04-acre lot located at 1 Foundry Street and Lot 106-34 a 0.5-acre lot located at 43 Mechanic Street. The former Lot 91-267 at 25 Mechanic Street has been merged with Lot 91-263, but its area is still referred to as 25 Mechanic Street in this narrative. The existing mill building will be converted to apartments, a second apartment building will be added to the 1 Foundry Street site, and the existing apartment building at 43 Mechanic Street will be renovated. Some existing features, such as the boiler building and smokestack, are to remain in place. The site is located within the Lebanon Downtown Zoning District (LD).

II Existing Conditions

The project site is located between Mechanic Street (Route 4) to the west and the Mascoma River to the east. Commercial and residential properties abut the site to the north and south. Access to the 1 Foundry Street site is available via Foundry Street at the north end of the site and Blacksmith Street at the south end. 25 and 43 Mechanic Street have direct access to Mechanic Street and no connection to the 1 Foundry Street site. 1 Foundry Street currently contains several structures including a building (Woolen Mill) of approximately 56,000-sf that was first a woolen mill and later used as a commercial laundry operation, a 6,500-sf office and warehouse building, and a 2,300-sf boiler building with an adjacent smokestack. All buildings are currently vacant. Water and sewer mains run through the site with service lines supplying each building. Primary power to the site is routed overhead from Blacksmith Street, and an electrical transformer central to the site feeds the existing buildings. The site contains a large, paved parking area in its south half. In general, the site slopes from north to south with steeper grades towards the north end and flatter areas in the southern parking lot. The entire lot drains to the Mascoma River either through a series of inlet structures and pipes or via sheet flow from the paved areas directly to the riverbank. There is an area of naturally vegetated land along the southeastern side of the property that is along the Mascoma River. The Mascoma River floodplain partially covers the vegetated area and it abuts the mill building.

The 25 Mechanic Street site was the former, 2,200 sf, Kleen Drycleaners. The building has been demolished and a small parking lot remains which sheet flows towards Mechanic Street the nearby municipal stormwater system. The remainder of the lot drains to 1 Foundry Street to the east.

43 Mechanic Street contains a small residential apartment building, a gravel parking area, and a detached two-car garage. This property slopes to the east and discharges most of its runoff to 1 Foundry Street.

III Proposed Work

The project will renovate the existing three-story Woolen Mill to provide 56 apartments. The former office and warehouse building will be removed from the site and replaced with surface parking, and a two-story parking structure will be added just north of the surface parking. These parking areas will be accessed from the existing 1 Foundry Street access point. Five surface parking spaces, including four ADA spaces, will be provided in front of the Woolen Mill. A new, five-story building (Building 3) of approximately 77,000 sf will be added to the south half of the lot and will contain 96 units with a subgrade parking garage. Additional parking will be provided at-grade on the west side of Building 3 and a driveway will connect to Blacksmith Street. A courtyard (Mill Yard) will be developed between the Woolen Mill and Building 3 to connect the two ends of the property and provide a central gathering space. Traffic flow will generally consist of two-way access from Foundry Street to parking facilities near the Woolen Mill and a two-way access from Blacksmith Street to Building 3 parking areas. Emergency vehicular access will be provided through the site via the driveways at the north and south ends and a dedicated clear route through the Mill Yard.

The 25 Mechanic Street site will be redeveloped into a 25-space parking facility. Vehicular access will be direct to Mechanic Street and a pedestrian connection will be added to the Mill Yard.

The back half of the 43 Mechanic Street building will be demolished, and the remainder will be renovated to provide three up to date apartments. Thirty surface parking spaces will be provided to serve the 43 Mechanic Street building and Building 3. Vehicular access will be direct to Mechanic Street and a pedestrian connection will be added to the 1 Foundry Street site near Buildin3.

Utilities

The project will run new water and sewer mains through the site to provide space for other site improvements. Both mains will connect to existing facilities in Foundry Street and Blacksmith Street. The Woolen Mill, the Boiler Building, and Building 3 will connect to the new mains for service. Each parking garage will contain a drainage system which is routed through a dedicated oil and grit separator and then onto the sewer main that runs through the 1 Foundry Street site. All buildings will have fire service line connections as required, and four on-site hydrants will provide additional protection. 43 Mechanic Street water and sewer services will remain unchanged with connections to mains in Mechanic Street. The 25 Mechanic Street sewer and water services will be abandoned at the Mechanic Street property line.

The project will remove the overhead power supply to the 1 Foundry Street site and install underground supply lines to three new transformers. Power will be distributed from the transformers to the buildings and on-site electric vehicle charging stations. The overhead connection to 43 Mechanic Street will remain in place.

Stormwater

Stormwater management will be accomplished through construction of five treatment and attenuation practices strategically placed throughout the site. The systems consist of one Cultec infiltration system, two Cultec underground sand filters with underdrain and impermeable liners, and two rain gardens with underdrains and impermeable liners. The redevelopment of the 25 Mechanic Street site will redirect all

on-site stormwater to the systems in the 1 Foundry Street sites. Test pit data was collected on October 20, 2022. Based on the soil logs, infiltration is only expected to be feasible at 43 Mechanic Street.

For additional details of existing and proposed drainage characteristics please refer to the HydroCAD reports and the Existing and Proposed Drainage maps included at the end of this report. The NHDES stormwater BMP practice tables are also included with this report. Water quality volume for each treatment practice is calculated on the BMP tables.

Stormwater analysis was conducted using HydroCAD Version 10.20 to compute the existing and post-redevelopment conditions for the 2-year, 10-year, 25-year, 50-year, and 100-year 24-hour storm events. This program uses the TR-20 stormwater calculation method.

The following table shows the results of the existing and post-redevelopment HydroCAD analysis. Point-of-Interest 1 (POI-1) is 1 Foundry Street's discharge into the Mascoma River and POI-2 is 25 Mechanic Street's runoff onto Mechanic Street.

Table 1 – HydroCAD Results

POI-1	**2-yr Storm**		**10-yr Storm**		**25-yr Storm**		**50-yr Storm**		**100-yr Storm**	
	cfs	cf	cfs	cf	cfs	cf	cfs	cf	cfs	cf
Existing	12.45	24,868	20.02	41,068	25.76	53,763	30.93	65,384	36.96	79,175
Post-Redevelopment	3.72	20,898	6.33	36,239	11.60	48,904	18.70	60,614	33.65	74,643
Delta	-8.73	-3,970	-13.69	-4,829	-14.16	-4,859	-12.23	-4,770	-3.31	-4,532

POI-2	**2-yr Storm**		**10-yr Storm**		**25-yr Storm**		**50-yr Storm**		**100-yr Storm**	
	cfs	cf	cfs	cf	cfs	cf	cfs	cf	cfs	cf
Existing	0.72	1,508	1.10	2,355	1.38	3,006	1.63	3,597	1.92	4,295
Post-Redevelopment	0	0	0	0	0	0	0	0	0	0
Delta	-0.72	-1,508	-1.10	-2,355	-1.38	-3,006	-1.63	-3,597	-1.92	-4,295

Water Quality Protection

This project will conform to Section 6.6.E.14 of The City of Lebanon's Site Plan Review Regulations in the following ways:

a. Hazardous materials will not be located or stored on the site other than those typical of projects of this type and size, i.e. gasoline in cars' gas tanks. In the rare event that a spill does occur, industry standard cleanup procedures will be implemented to prevent these materials from entering surface waters or groundwater.

b. All on site fuel storage facilities will meet the standards of NHDES and NFPA.

c. This project is subject to an EPA Construction General Permit (CGP) and a NHDES Alteration of Terrain permit and will comply with the standards of both. Where the Lebanon Site Plan Review regulations are stricter, they shall govern.

d. This project will help improve the quality of receiving waters in two ways. First, contaminated soils will be removed from the site. This will eliminate contaminates from leaching into groundwater and seeping into Mascoma River. Second, the project site currently has zero stormwater treatment, so contaminates either leach into groundwater or flow into Mascoma River. The site plan will add significant stormwater infrastructure to treat runoff before it leaves the site.

e. The Applicant has commissioned extensive soil explorations on site which have identified the locations of contaminated soils on site. All such materials will be removed in a manner approved by NHDES.

Design Standards for Redevelopment

This project will conform to Section 6.6.G of The City of Lebanon's Site Plan Review Regulations in the following ways:

- Section 6.6.G requires that Low Impact Development (LID) techniques are implemented on site to provide treatment for at least 50% of the redevelopment area. This project will provide treatment for approximately 90% of the redevelopment area.
- The areas receiving treatment are depicted on drainage map D1.2 of the Drainage Analysis.

Soil Erosion and Sedimentation Control

This project will be subject to the erosion control requirements of both the NH DES AoT Program and EPA National Pollutants Discharge Elimination System (NPDES) 2022 Construction General Permit (CGP). Standard erosion and sedimentation control measures will be implemented during construction of the project. Inlet protections will be placed around existing culvert and catch basin inlets. Silt fencing and/or straw wattles will be placed below disturbed slopes and soil stockpile areas. Stone construction entrances will be implemented to prevent vehicles from transporting dirt and soil off the site. Once final grades are established, landscaping features will be installed for the project area. Erosion control measures will be inspected every seven (7) days and after storms of 0.5" or more. Maintenance and repair needs will be identified during the inspections and promptly addressed by the contractor.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	Lebanon Woolen Mill
Longitude	72.255 degrees West
Latitude	43.640 degrees North
Elevation	0 feet
Date/Time	Wed, 24 Aug 2022 18:09:28 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.02	**1yr**	0.70	0.93	1.16	1.43	1.76	2.15	2.42	**1yr**	1.90	2.32	2.69	3.30	3.79	**1yr**
2yr	0.31	0.47	0.59	0.78	0.98	1.22	**2yr**	0.84	1.11	1.39	1.70	2.07	2.50	2.81	**2yr**	2.21	2.70	3.15	3.76	4.30	**2yr**
5yr	0.36	0.57	0.71	0.95	1.22	1.53	**5yr**	1.05	1.40	1.75	2.13	2.56	3.07	3.47	**5yr**	2.71	3.34	3.86	4.54	5.17	**5yr**
10yr	0.41	0.65	0.82	1.11	1.45	1.82	**10yr**	1.25	1.66	2.09	2.53	3.03	3.58	4.08	**10yr**	3.17	3.92	4.51	5.25	5.94	**10yr**
25yr	0.49	0.78	0.99	1.36	1.81	2.29	**25yr**	1.56	2.10	2.63	3.17	3.76	4.40	5.05	**25yr**	3.89	4.85	5.55	6.35	7.15	**25yr**
50yr	0.56	0.89	1.14	1.60	2.15	2.73	**50yr**	1.86	2.50	3.13	3.77	4.44	5.14	5.93	**50yr**	4.55	5.70	6.49	7.34	8.23	**50yr**
100yr	0.63	1.02	1.32	1.87	2.55	3.26	**100yr**	2.20	2.99	3.74	4.47	5.23	6.02	6.98	**100yr**	5.33	6.71	7.59	8.49	9.47	**100yr**
200yr	0.73	1.19	1.54	2.20	3.04	3.88	**200yr**	2.62	3.57	4.45	5.30	6.17	7.04	8.21	**200yr**	6.23	7.89	8.89	9.82	10.90	**200yr**
500yr	0.88	1.44	1.88	2.72	3.82	4.89	**500yr**	3.29	4.52	5.60	6.64	7.67	8.68	10.18	**500yr**	7.68	9.79	10.95	11.92	13.13	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.82	**1yr**	0.63	0.80	0.99	1.19	1.59	1.89	2.15	**1yr**	1.67	2.07	2.41	2.85	3.45	**1yr**
2yr	0.29	0.46	0.56	0.76	0.94	1.10	**2yr**	0.81	1.08	1.24	1.62	2.06	2.45	2.75	**2yr**	2.16	2.65	3.09	3.70	4.22	**2yr**
5yr	0.34	0.52	0.65	0.89	1.13	1.32	**5yr**	0.97	1.29	1.49	1.90	2.42	2.89	3.27	**5yr**	2.56	3.14	3.65	4.28	4.89	**5yr**
10yr	0.37	0.57	0.71	0.99	1.28	1.49	**10yr**	1.11	1.46	1.68	2.16	2.70	3.28	3.73	**10yr**	2.90	3.59	4.13	4.77	5.46	**10yr**
25yr	0.43	0.65	0.81	1.15	1.52	1.75	**25yr**	1.31	1.71	1.96	2.52	3.13	3.87	4.44	**25yr**	3.43	4.27	4.88	5.51	6.31	**25yr**
50yr	0.46	0.71	0.88	1.26	1.70	1.98	**50yr**	1.47	1.93	2.20	2.85	3.51	4.38	5.07	**50yr**	3.88	4.88	5.54	6.12	7.04	**50yr**
100yr	0.51	0.77	0.97	1.40	1.92	2.22	**100yr**	1.66	2.17	2.45	3.18	3.94	4.97	5.78	**100yr**	4.39	5.56	6.28	6.81	7.81	**100yr**
200yr	0.56	0.84	1.07	1.55	2.16	2.51	**200yr**	1.86	2.45	2.75	3.59	4.46	5.62	6.60	**200yr**	4.98	6.35	7.15	7.56	8.70	**200yr**
500yr	0.64	0.95	1.22	1.78	2.52	2.91	**500yr**	2.18	2.84	3.16	4.19	5.22	6.63	7.88	**500yr**	5.87	7.57	8.49	8.65	10.00	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.45	0.54	0.73	0.90	1.03	**1yr**	0.78	1.01	1.19	1.52	1.89	2.33	2.64	**1yr**	2.06	2.54	2.88	3.52	4.03	**1yr**
2yr	0.32	0.49	0.61	0.82	1.02	1.19	**2yr**	0.88	1.17	1.36	1.73	2.18	2.57	2.87	**2yr**	2.27	2.76	3.23	3.86	4.40	**2yr**
5yr	0.40	0.61	0.76	1.04	1.32	1.56	**5yr**	1.14	1.52	1.73	2.16	2.72	3.25	3.67	**5yr**	2.87	3.53	4.09	4.79	5.45	**5yr**
10yr	0.48	0.73	0.91	1.27	1.64	1.94	**10yr**	1.42	1.89	2.13	2.61	3.23	3.89	4.42	**10yr**	3.44	4.25	4.90	5.66	6.43	**10yr**
25yr	0.61	0.93	1.15	1.65	2.17	2.60	**25yr**	1.87	2.54	2.84	3.34	4.06	4.96	5.68	**25yr**	4.39	5.46	6.22	7.09	8.02	**25yr**
50yr	0.73	1.11	1.39	1.99	2.68	3.24	**50yr**	2.32	3.16	3.52	4.03	4.84	5.94	6.86	**50yr**	5.26	6.59	7.46	8.42	9.50	**50yr**
100yr	0.89	1.34	1.68	2.43	3.33	4.06	**100yr**	2.87	3.97	4.40	4.86	5.77	7.14	8.29	**100yr**	6.32	7.97	8.95	10.01	11.25	**100yr**
200yr	1.07	1.62	2.05	2.96	4.13	5.08	**200yr**	3.57	4.96	5.49	5.87	6.89	8.58	10.02	**200yr**	7.60	9.63	10.74	11.91	13.34	**200yr**
500yr	1.39	2.07	2.66	3.87	5.50	6.87	**500yr**	4.75	6.71	7.37	7.53	8.66	10.96	12.88	**500yr**	9.70	12.38	13.67	15.03	16.72	**500yr**

Powered by ACIS
Northeast Regional Climate Center

Doiron Environmental LLC
720 Browns Ridge Road
Ossipee, NH 03864
(603) 581-4478

SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

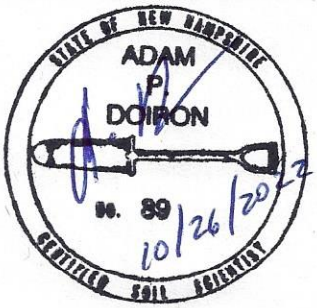
TEST PIT # 1 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-3	Asphalt pavement
^Au1	3-19	10YR3/1, fine sandy loam, 8% coarse fragments, massive, friable, no roots, clear wavy boundary (fill material)
^Au2	19-27	10YR3/2, fine sandy loam, 5% coarse fragments, massive, friable, no roots, abrupt broken boundary (fill material)
^Cu	27-53	2.5Y4/2, fine sandy loam, 8% coarse fragments, massive, friable, no roots, abrupt broken boundary (fill material)
2Ab	53-64	10YR3/2, fine sandy loam, no coarse fragments, weak fine granular, friable, common very fine to medium roots, clear wavy boundary
2Bwb	64-72	10YR3/3, fine sandy loam, no coarse fragments, moderate medium subangular blocky, friable, common very fine to coarse roots, clear wavy boundary
2C	72-100	10YR3/3, gravelly loamy sand, 30% coarse fragments, single grain, loose, few very fine to fine roots, clear wavy boundary
3Cdg	100-150	2.5Y4/2, very fine sandy loam, no coarse fragments, massive, firm, no roots, common distinct (7.5YR3/2) redox concentrations, common prominent (10Y4/1) redox depletions (truncated)

Estimated Seasonal High Water Table @ 100 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ 100 inches

Restrictive @ 100 inches
Refusal @ None
Roots @ 82 inches

Notes:
1. Soil Map Unit Name: Udorthents, refuse substratum (200_/cbhbb)
2. Location is edge of paved parking lot.
3. Several stones were observed in the fill material
4. Artifacts, including bricks, were observed to 53 inches.
5. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.



Doiron Environmental LLC
720 Browns Ridge Road
Ossipee, NH 03864
(603) 581-4478

SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

TEST PIT # 2 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-3	Asphalt pavement
^Au1	3-8	10YR2/1, gravelly loamy coarse sand, 15% coarse fragments, massive, very friable, no roots, clear wavy boundary (fill material)
^Au2	8-36	10YR3/2, gravelly fine sandy loam, 15% coarse fragments, massive, friable, no roots, abrupt wavy boundary, common prominent redox concentrations (fill material)
^Au3	36-41	10YR2/1, fine sandy loam, <5% coarse fragments, >25% artifacts, massive, friable, no roots, abrupt wavy boundary (fill material)
^Au4	41-53	10YR2/2, fine sandy loam, 1% coarse fragments, moderate fine granular, friable, no roots, gradual wavy boundary (fill material)
2Bwb	53-65	10YR3/4, fine sandy loam, no coarse fragments, moderate medium subangular blocky, friable, no roots, gradual wavy boundary
2C	65-108	10YR3/2, extremely gravelly loamy sand, 70% coarse fragments, single grain, loose, no roots, clear wavy boundary
3Cdg	108-125	2.5Y4/2, very fine sandy loam, no coarse fragments, massive, firm, no roots, common distinct (7.5YR3/2) redox concentrations, common prominent (10Y4/1) redox depletions

Estimated Seasonal High Water Table @ 108 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ 108 inches

Restrictive @ 108 inches
Refusal @ 125 inches[5]
Roots @ None

Notes:
1. Soil Map Unit Name: Udorthents, refuse substratum (200_/cbhbb)
2. Location is paved parking lot.
3. Several stones were observed in the fill material
4. Artifacts, including bricks, glass, and metal, were observed to 53 inches.
5. Ledge or large boulder observed at 125 inches.
6. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.

STATE OF NEW HAMPSHIRE
ADAM
P.
DOIRON
NO. 89
10/26/2022
CERTIFIED SOIL SCIENTIST

Doiron Environmental LLC
720 Browns Ridge Road
Ossipee, NH 03864
(603) 581-4478

SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

TEST PIT # 3 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
^A	0-9	10YR2/2, loamy fine sand, 2% coarse fragments, weak fine granular, very friable, common very fine to very coarse roots, gradual wavy boundary (fill material)
Ab	9-33	10YR2/2, fine sandy loam, 2% coarse fragments, weak fine granular, friable, common very fine to very coarse roots, gradual wavy boundary (mixing)
Bwb	33-41	10YR3/4, fine sandy loam, 10% coarse fragments, weak medium granular, friable, common very fine to very coarse roots, clear broken boundary
C	41-59	10YR4/4, extremely gravelly fine sandy loam, 65% coarse fragments, single grain, loose, few very fine to coarse roots, abrupt wavy boundary
2Cdg	59-108	2.5Y5/2, very fine sandy loam, 4% coarse fragments, massive, firm, no roots, common distinct (7.5YR4/3) redox concentrations

Estimated Seasonal High Water Table @ 59 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ 59 inches
Refusal @ None
Roots @ 59 inches

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/cbabb)
2. Location is wooded with significant non-native invasive plant species, including Asian bittersweet (*Celastrus orbiculatus*), burning bush (*Euonymus alatus*), and multiflora rose (*Rosa multiflora*).
3. Several stones and a ~5-foot diameter boulder were observed in the test pit.
4. A stone and small boulder stockpile was observed near the test pit location.
5. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.

STATE OF NEW HAMPSHIRE
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NH 89
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SOIL EVALUATION REPORT
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Lebanon, New Hampshire

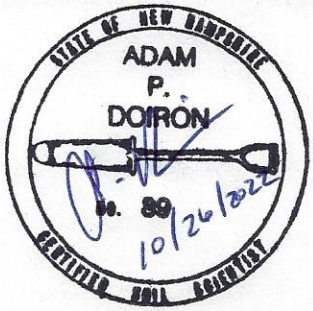
TEST PIT # 4 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-1	Crushed stone underlain by plastic weed-block barrier
^Cd	1-27	2.5Y4/2, gravelly fine sandy loam, 20% coarse fragments, massive, firm, no roots, abrupt wavy boundary (fill material)
A1b	27-31	10YR3/1, fine sandy loam, 7% coarse fragments, moderate fine granular, friable, common very fine to fine roots (old), clear wavy boundary (mixing)
A2b	31-36	10YR3/3, fine sandy loam, 7% coarse fragments, moderate fine granular, friable, common very fine to fine roots (old), clear wavy boundary
A3b	36-42	10YR3/2, fine sandy loam, 5% coarse fragments, weak fine granular, friable, common very fine to fine roots (old), clear wavy boundary
Cdg	42-75	2.5Y4/2, very fine sandy loam, 10% coarse fragments, massive, firm, few very fine to coarse roots, common prominent (7.5YR4/4) redox concentrations

Estimated Seasonal High Water Table @ 42 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ 42 inches
Refusal @ None
Roots @ 57 inches

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/cchbb)
2. Location is gravel parking lot.
3. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
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1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

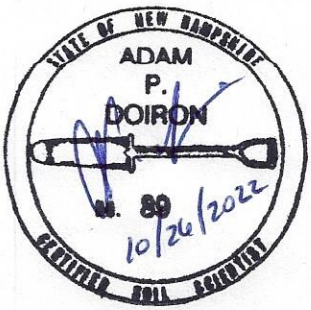
TEST PIT # 5 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-3	Asphalt pavement
^A	3-13	10YR2/1, gravelly loamy sand, 20% coarse fragments, massive, friable, no roots, abrupt wavy boundary (fill material)
^Cd1	13-17	2.5Y4/2, gravelly very fine sandy loam, 15% coarse fragments, massive, firm, no roots, abrupt wavy boundary, common prominent redox concentrations (fill material)
^Cd2	17-27	10YR2/1, gravelly sandy loam, 20% coarse fragments, massive, firm, no roots, clear wavy boundary (fill material)
^A	27-33	10YR3/2, fine sandy loam, 2% coarse fragments, massive, friable, no roots, clear wavy boundary (fill material)
^Bw	33-54	10YR4/3, fine sandy loam, 5% coarse fragments, weak medium granular, friable, no roots, gradual wavy boundary (fill material)
^C	54-93	2.5Y4/3, very bouldery fine sandy loam, 45% coarse fragments, massive, very friable, no roots, clear wavy boundary (fill material)
^Cdg	93-133	5Y4/2, bouldery loamy very fine sand, 25% coarse fragments, massive, friable & firm, no roots, common prominent redox concentrations (fill material)

Estimated Seasonal High Water Table @ 93 inches
Observed Water Table (Free Water) @ 129 inches
Wet (Non-Satiated) @ None

Restrictive @ 13 & 93 inches[3]
Refusal @ None
Roots @ None

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/cacbc)
2. Location is paved parking lot.
3. Compacted fill material is restrictive from 13 inches to 27 inches and 93 inches to 133 inches plus.
4. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

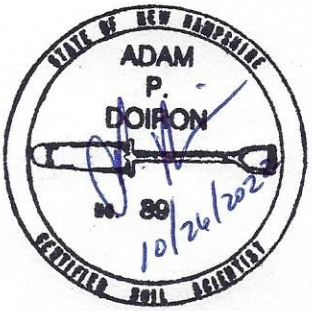
TEST PIT # 6 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
^Au	0-34	10YR2/1, cobbly fine sandy loam, 30% coarse fragments, massive, friable (fill material)
^Cu	34-60	7.5YR2.5/2, bouldery fine sandy loam, 25% coarse fragments, massive, friable (fill material)

Estimated Seasonal High Water Table @ None
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ None
Refusal @ None
Roots @ 60 inches

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/caabb)
2. Location is brushy/shrubby.
3. Less than 2% artifacts, including trash and glass, were observed within the test pit.
4. A ~5-foot diameter boulder was observed within the test pit.
5. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

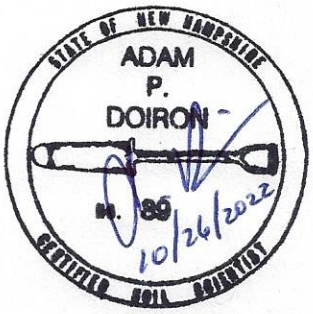
TEST PIT # 7 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-6	Crushed stone (fill material)
^Au	6-27	10YR2/2, loamy sand, 10% coarse fragments, massive, friable, no roots, gradual wavy boundary (fill material)
^Cu	27-87	10YR3/2, fine sandy loam, 5% coarse fragments, >50% artifacts, massive, friable, common very fine to very coarse roots, clear wavy boundary (fill material)
2C	87-112	2.5Y4/3, fine sandy loam, 5% coarse fragments, massive, friable, no roots, common distinct (7.5YR3/4) redox concentrations (truncated)

Estimated Seasonal High Water Table @ 87 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ None
Refusal @ None
Roots @ 90 inches

Notes:
1. Soil Map Unit Name: Udorthents, refuse substratum (200_/caabb)
2. Location is adjacent to paved parking lot.
3. Artifacts, including bricks, glass, concrete blocks, wires, pipes, ceramic, and metal, were observed to 87 inches.
4. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 1", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

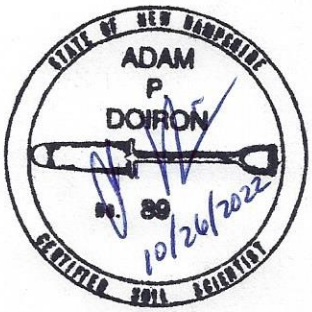
TEST PIT # 8 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
	0-3	Asphalt pavement
^C	3-6	10Y4/1, gravelly sandy loam, 15% coarse fragments, massive, friable (fill material)
^A	6-20[3]	10YR3/2, gravelly sandy loam, 15% coarse fragments, massive, friable (fill material)
2^Cg	20-30[3]	5Y4/1, very fine sandy loam, 5% coarse fragments, massive, friable & some firm, common prominent redox concentrations (fill material)
3^Cd	30-55[3]	7.5YR3/2, gravelly sandy loam, 15% coarse fragments, massive, firm, common distinct redox concentrations (fill material)

Estimated Seasonal High Water Table @ 20 inches
Observed Water Table (Free Water) @ 37 inches
Wet (Non-Satiated) @ None

Restrictive @ 30 inches
Refusal @ 6 - >60 inches[3]
Roots @ None

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/dacbb, 299_/daebb, & 299_/badbd)
2. Location is paved parking lot adjacent to concrete retaining wall.
3. Ledge observed at 6 inches in northwest corner of test pit and greater than 60 inches in southeast corner.
4. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 2", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
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Lebanon, New Hampshire

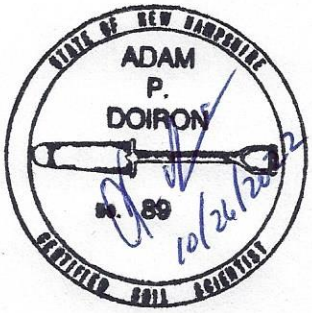
TEST PIT # 9 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
^A1	0-15	10YR2/2, fine sandy loam, 5% coarse fragments, massive, friable (fill material)
^A2	15-33	10YR3/1, fine sandy loam, 3% coarse fragments, massive, friable (fill material)
^Bw	33-52	10YR3/3, fine sandy loam, 10% coarse fragments, massive, friable (fill material)
^Cg	52-76	2.5Y4/2, sandy loam, 10% coarse fragments, massive, friable, common prominent (7.5YR4/6) redox concentrations (fill material)

Estimated Seasonal High Water Table @ 52 inches
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ None
Refusal @ None
Roots @ 50 inches

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/caabb)
2. Location is maintained lawn.
3. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 2", dated October 26, 2022.



10/26/2022

Doiron Environmental LLC
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SOIL EVALUATION REPORT
LWM Residential LLC Property
Tax Map 91, Lots 263 & 267; Tax Map 106, Lot 34
1 Foundry Street; 25 & 43 Mechanic Street
Lebanon, New Hampshire

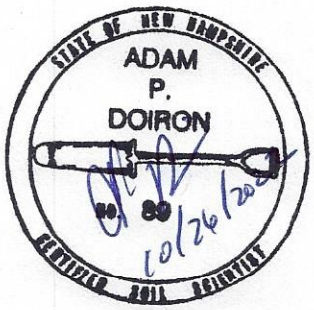
TEST PIT # 10 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
^A1	0-22	10YR2/1, fine sandy loam, 5% coarse fragments, weak fine granular, friable (fill material)
^A2	22-25	5YR2.5/1, gravelly sandy loam, 15% coarse fragments, weak fine granular, friable, common distinct redox concentrations (fill material)
Cdg1	25-30	2.5Y4/1, very fine sandy loam, no coarse fragments, massive, firm, common prominent redox concentrations (truncated)
Cdg2	30-45	5BG4/1, very fine sandy loam, no coarse fragments, massive, firm, common prominent redox concentrations
Cdg3	45-72	10Y4/1, silt loam, no coarse fragments, massive, firm, common prominent redox concentrations

Estimated Seasonal High Water Table @ 22 inches
Observed Water Table (Free Water) @ 28 inches
Wet (Non-Satiated) @ None

Restrictive @ 25 inches
Refusal @ None
Roots @ 25 inches

Notes:
1. Soil Map Unit Name: Udorthents, smoothed (299_/ddcbc)
2. Location is maintained lawn.
3. Strong fuel smell was observed from test pit.
4. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 2", dated October 26, 2022.



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SOIL EVALUATION REPORT
LWM Residential LLC Property
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Lebanon, New Hampshire

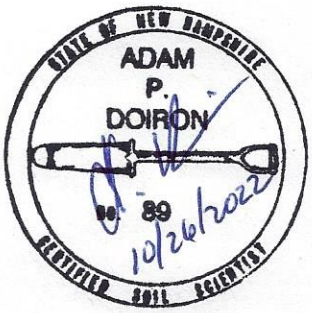
TEST PIT # 11 By: Adam Doiron, NHCSS #89 Date Evaluated: 10/20/2022

Horizon	Depth (in)	Description
^Au	0-11	10YR2/1, fine sandy loam, 2% coarse fragments, weak fine granular, very friable (fill material)
^Cu	11-60	10YR3/1, stony fine sandy loam, 18% coarse fragments, artifacts, massive, friable (fill material)

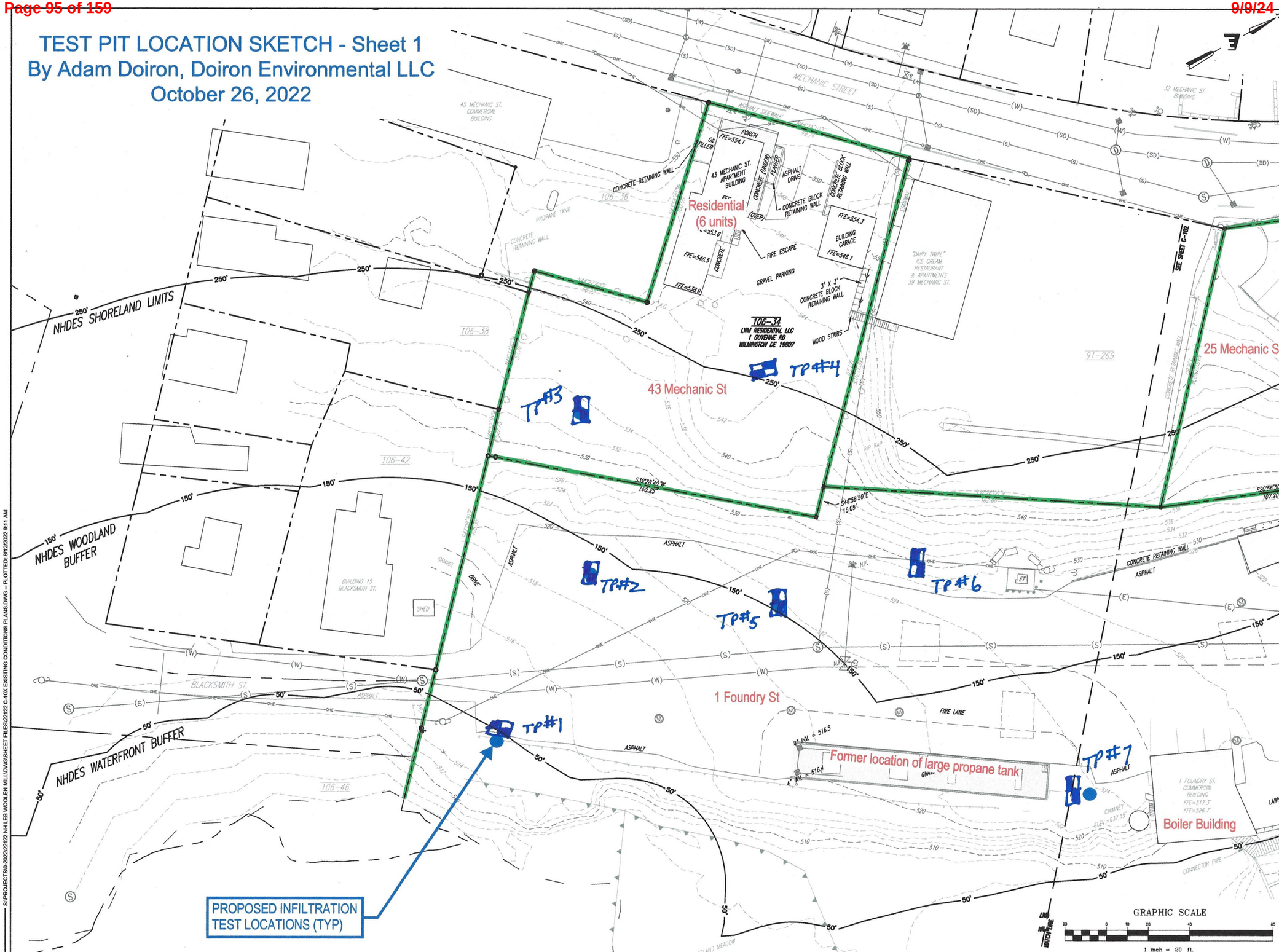
Estimated Seasonal High Water Table @ None
Observed Water Table (Free Water) @ None
Wet (Non-Satiated) @ None

Restrictive @ None
Refusal @ None
Roots @ 30 inches

Notes:
1. Soil Map Unit Name: Udorthents, refuse substratum (200_/caabb)
2. Location is maintained lawn.
3. Artifacts, including bricks, glass, ceramic, and metal, were observed to 60+ inches.
4. Test pit location is depicted in the attached "Test Pit Location Sketch – Sheet 2", dated October 26, 2022.



TEST PIT LOCATION SKETCH - Sheet 1
By Adam Doiron, Doiron Environmental LLC
October 26, 2022



SITE PLAN REVIEW

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LANDSCAPE
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One Bowdoin Square, Suite 801
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1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date

DATE: 08.15.22

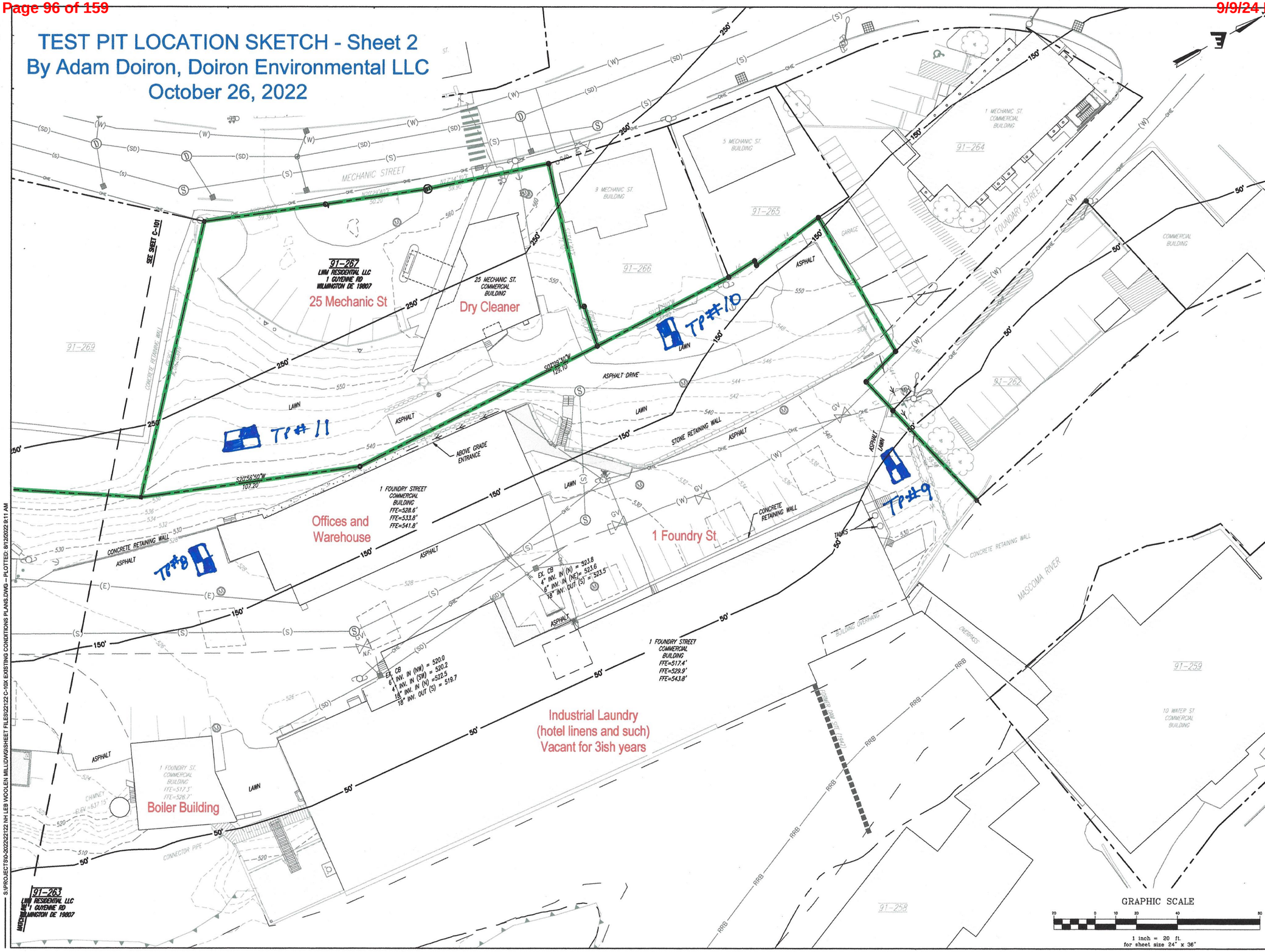
SCALE: 1"= 20'

EXISTING CONDITIONS PLAN (1 OF 2)

C-101

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 C-101X EXISTING CONDITIONS PLANS.DWG – PLOTTED: 8/12/2022 9:11 AM

TEST PIT LOCATION SKETCH - Sheet 2
By Adam Doiron, Doiron Environmental LLC
October 26, 2022



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LANDSCAPE
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1 FOUNDRY ST.
LEBANON, NH

EV PROJECT: 22122

No.	Description	Date

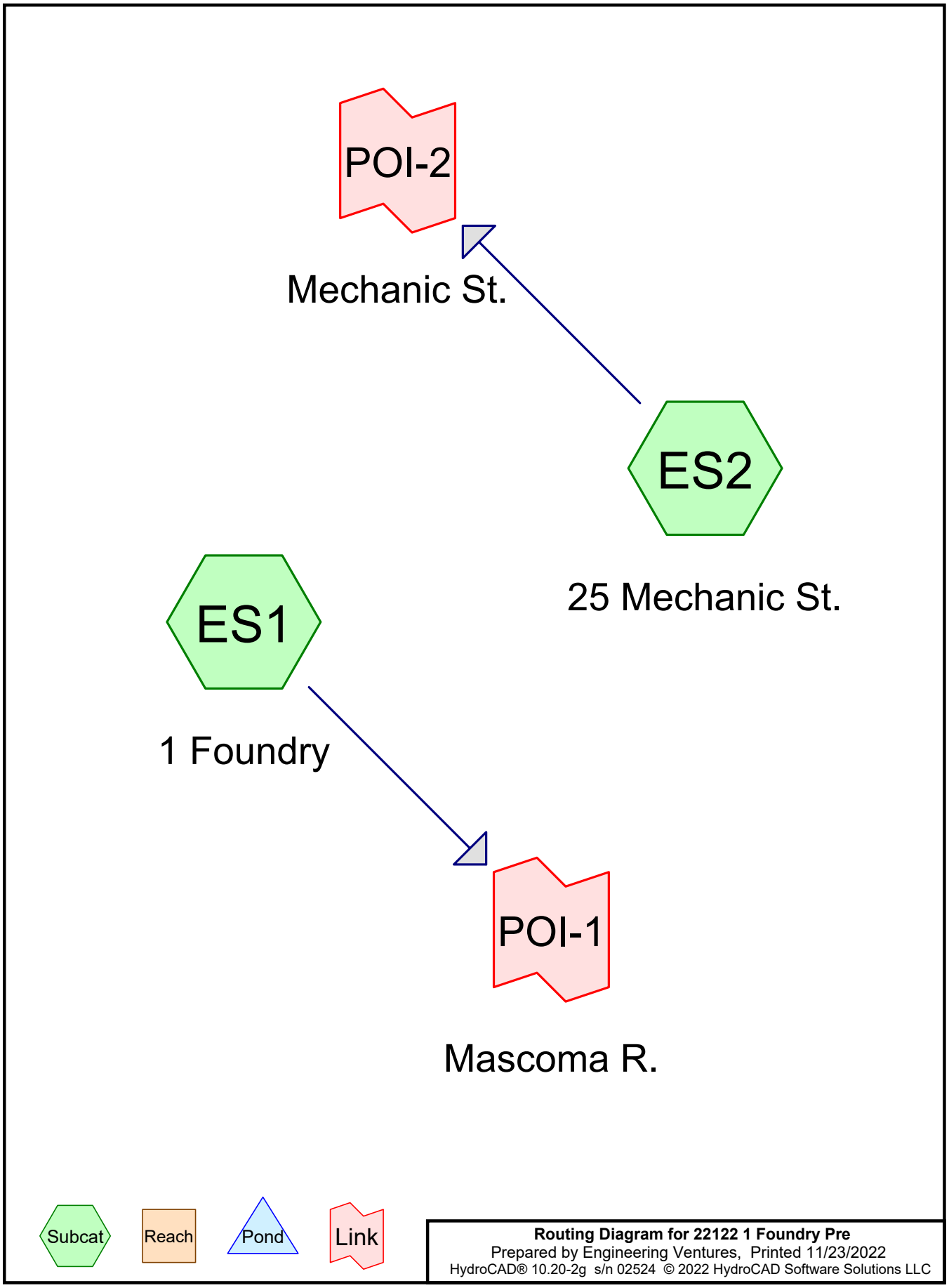
DATE: 08.15.22

SCALE: 1"= 20'

EXISTING CONDITIONS PLAN (2 OF 2)

C-102

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWGS\SHEET FILES\22122 C-10X EXISTING CONDITIONS PLANS.DWG – PLOTTED: 8/12/2022 8:11 AM


POI-2
Mechanic St.
ES2
25 Mechanic St.
ES1
1 Foundry
POI-1
Mascoma R.
Subcat
Reach
Pond
Link
Routing Diagram for 22122 1 Foundry Pre
Prepared by Engineering Ventures, Printed 11/23/2022
HydroCAD® 10.20-2g s/n 02524 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
65,331	74	>75% Grass cover, Good, HSG C (ES1, ES2)
140,464	98	Paved parking, HSG C (ES1, ES2)
205,795	**90**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
205,795	HSG C	ES1, ES2
0	HSG D	
0	Other	
205,795		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: 1 Foundry Runoff Area=196,064 sf 67.45% Impervious Runoff Depth=1.52"
Tc=5.0 min CN=90 Runoff=12.45 cfs 24,868 cf

SubcatchmentES2: 25 Mechanic St. Runoff Area=9,731 sf 84.52% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=94 Runoff=0.72 cfs 1,508 cf

Link POI-1: Mascoma R. Inflow=12.45 cfs 24,868 cf
Primary=12.45 cfs 24,868 cf

Link POI-2: Mechanic St. Inflow=0.72 cfs 1,508 cf
Primary=0.72 cfs 1,508 cf

Total Runoff Area = 205,795 sf Runoff Volume = 26,376 cf Average Runoff Depth = 1.54"
31.75% Pervious = 65,331 sf 68.25% Impervious = 140,464 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: 1 Foundry Runoff Area=196,064 sf 67.45% Impervious Runoff Depth=2.51"
Tc=5.0 min CN=90 Runoff=20.02 cfs 41,068 cf

SubcatchmentES2: 25 Mechanic St. Runoff Area=9,731 sf 84.52% Impervious Runoff Depth=2.90"
Tc=5.0 min CN=94 Runoff=1.10 cfs 2,355 cf

Link POI-1: Mascoma R. Inflow=20.02 cfs 41,068 cf
Primary=20.02 cfs 41,068 cf

Link POI-2: Mechanic St. Inflow=1.10 cfs 2,355 cf
Primary=1.10 cfs 2,355 cf

Total Runoff Area = 205,795 sf Runoff Volume = 43,423 cf Average Runoff Depth = 2.53"
31.75% Pervious = 65,331 sf 68.25% Impervious = 140,464 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: 1 Foundry Runoff Area=196,064 sf 67.45% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=90 Runoff=25.76 cfs 53,763 cf

SubcatchmentES2: 25 Mechanic St. Runoff Area=9,731 sf 84.52% Impervious Runoff Depth=3.71"
Tc=5.0 min CN=94 Runoff=1.38 cfs 3,006 cf

Link POI-1: Mascoma R. Inflow=25.76 cfs 53,763 cf
Primary=25.76 cfs 53,763 cf

Link POI-2: Mechanic St. Inflow=1.38 cfs 3,006 cf
Primary=1.38 cfs 3,006 cf

Total Runoff Area = 205,795 sf Runoff Volume = 56,769 cf Average Runoff Depth = 3.31"
31.75% Pervious = 65,331 sf 68.25% Impervious = 140,464 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: 1 Foundry Runoff Area=196,064 sf 67.45% Impervious Runoff Depth=4.00"
Tc=5.0 min CN=90 Runoff=30.93 cfs 65,384 cf

SubcatchmentES2: 25 Mechanic St. Runoff Area=9,731 sf 84.52% Impervious Runoff Depth=4.44"
Tc=5.0 min CN=94 Runoff=1.63 cfs 3,597 cf

Link POI-1: Mascoma R. Inflow=30.93 cfs 65,384 cf
Primary=30.93 cfs 65,384 cf

Link POI-2: Mechanic St. Inflow=1.63 cfs 3,597 cf
Primary=1.63 cfs 3,597 cf

Total Runoff Area = 205,795 sf Runoff Volume = 68,981 cf Average Runoff Depth = 4.02"
31.75% Pervious = 65,331 sf 68.25% Impervious = 140,464 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentES1: 1 Foundry Runoff Area=196,064 sf 67.45% Impervious Runoff Depth=4.85"
Tc=5.0 min CN=90 Runoff=36.96 cfs 79,175 cf

SubcatchmentES2: 25 Mechanic St. Runoff Area=9,731 sf 84.52% Impervious Runoff Depth=5.30"
Tc=5.0 min CN=94 Runoff=1.92 cfs 4,295 cf

Link POI-1: Mascoma R. Inflow=36.96 cfs 79,175 cf
Primary=36.96 cfs 79,175 cf

Link POI-2: Mechanic St. Inflow=1.92 cfs 4,295 cf
Primary=1.92 cfs 4,295 cf

Total Runoff Area = 205,795 sf Runoff Volume = 83,470 cf Average Runoff Depth = 4.87"
31.75% Pervious = 65,331 sf 68.25% Impervious = 140,464 sf

Summary for Subcatchment ES1: 1 Foundry

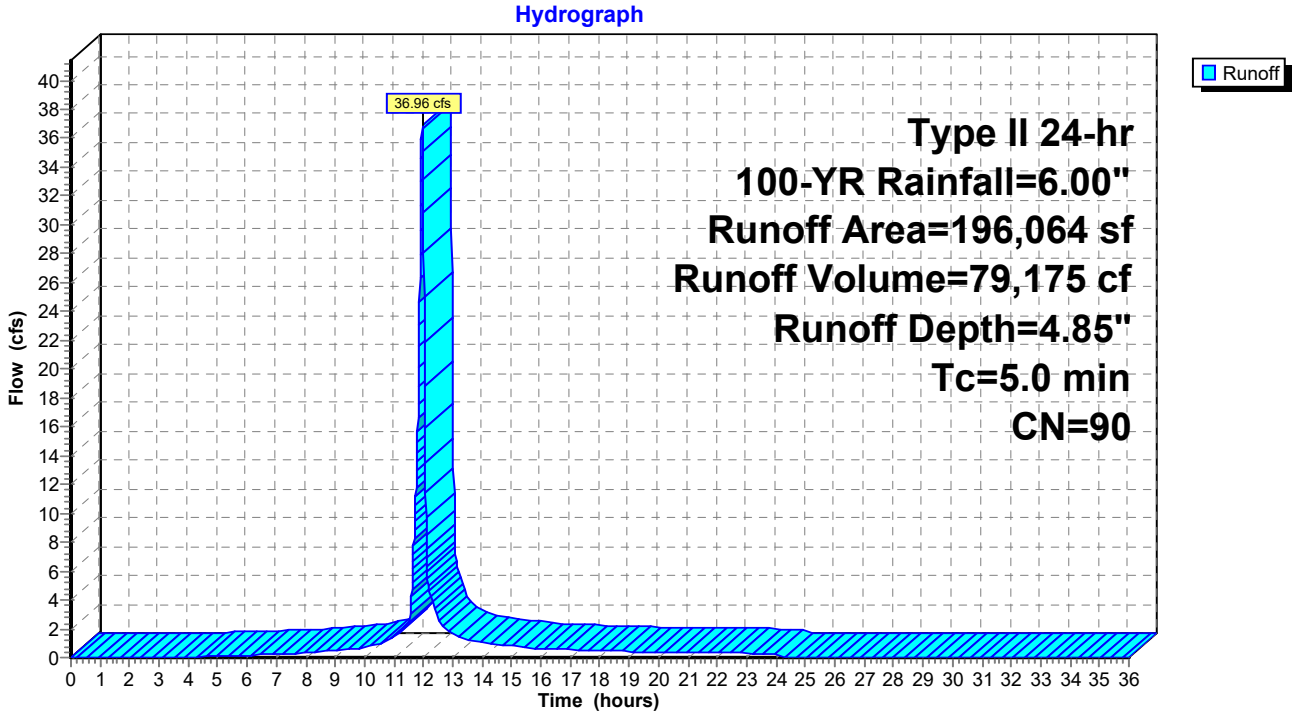
Runoff = 36.96 cfs @ 11.96 hrs, Volume= 79,175 cf, Depth= 4.85"
Routed to Link POI-1 : Mascoma R.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
132,239	98	Paved parking, HSG C
63,825	74	>75% Grass cover, Good, HSG C
196,064	90	Weighted Average
63,825		32.55% Pervious Area
132,239		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment ES1: 1 Foundry



Summary for Subcatchment ES2: 25 Mechanic St.

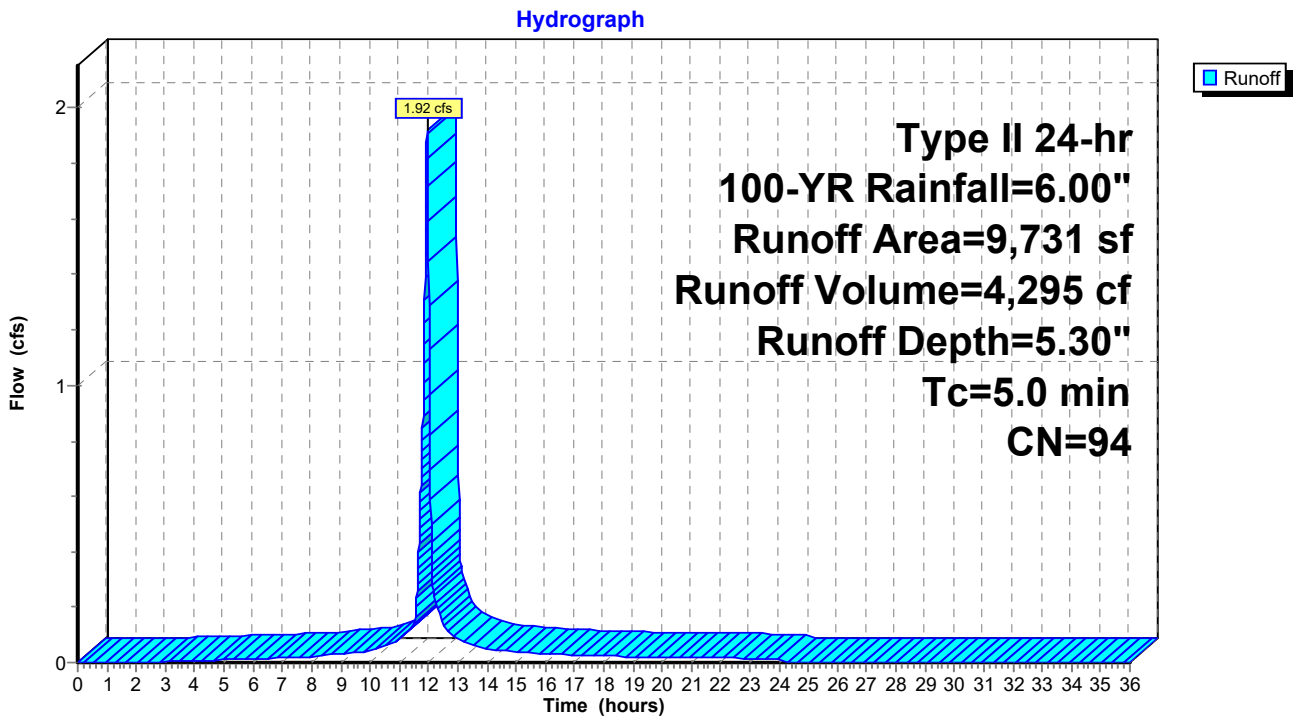
Runoff = 1.92 cfs @ 11.96 hrs, Volume= 4,295 cf, Depth= 5.30"
Routed to Link POI-2 : Mechanic St.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
8,225	98	Paved parking, HSG C
1,506	74	>75% Grass cover, Good, HSG C
9,731	94	Weighted Average
1,506		15.48% Pervious Area
8,225		84.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment ES2: 25 Mechanic St.

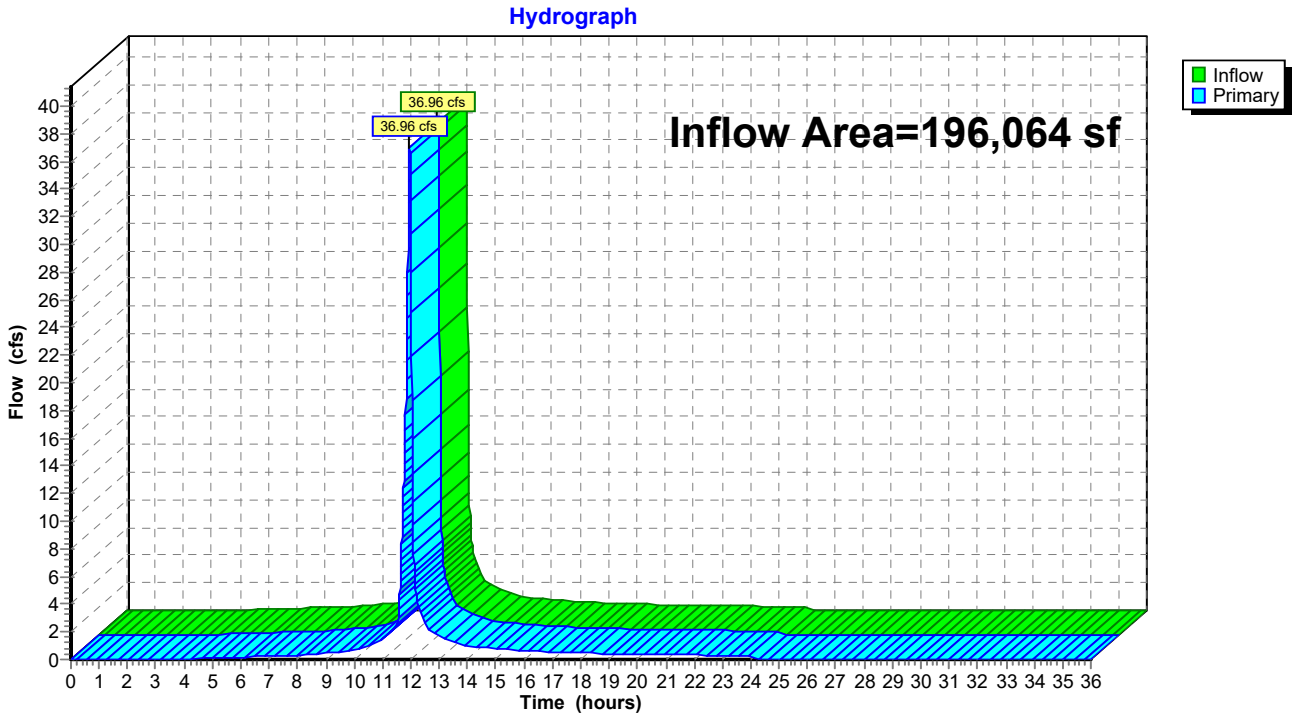


Summary for Link POI-1: Mascoma R.

Inflow Area = 196,064 sf, 67.45% Impervious, Inflow Depth = 4.85" for 100-YR event
Inflow = 36.96 cfs @ 11.96 hrs, Volume= 79,175 cf
Primary = 36.96 cfs @ 11.96 hrs, Volume= 79,175 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link POI-1: Mascoma R.

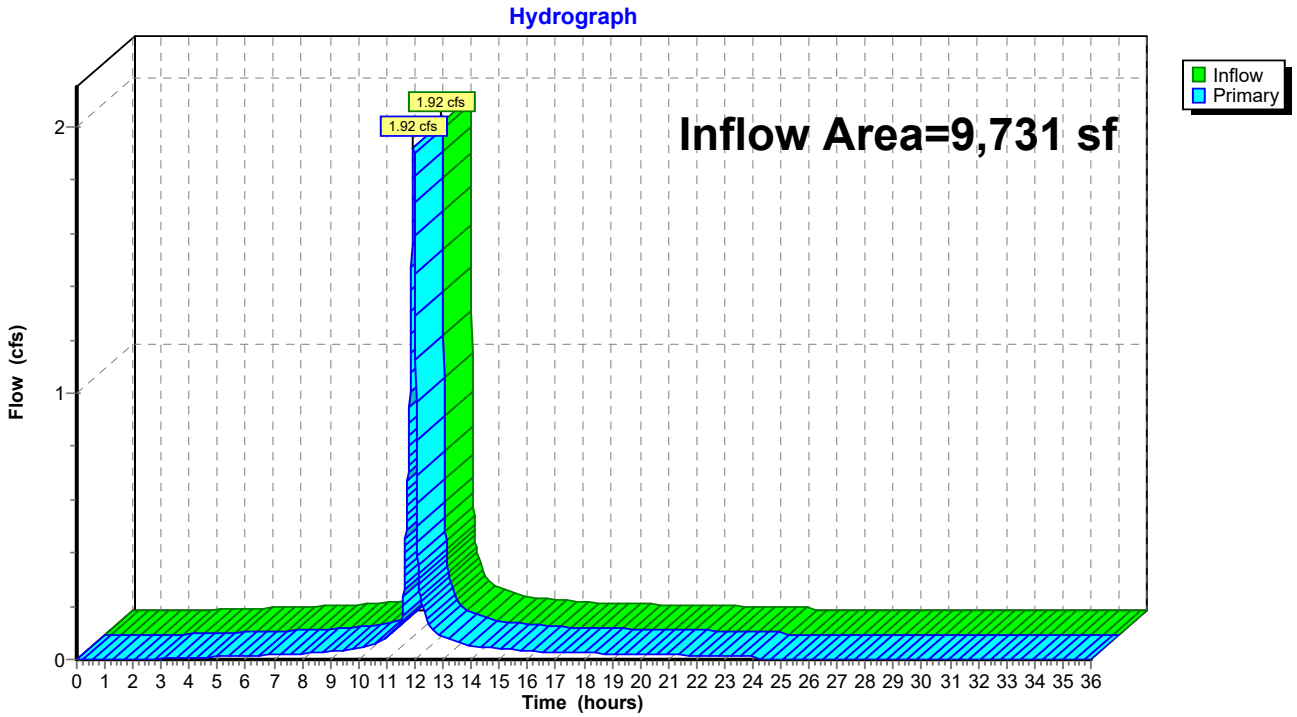


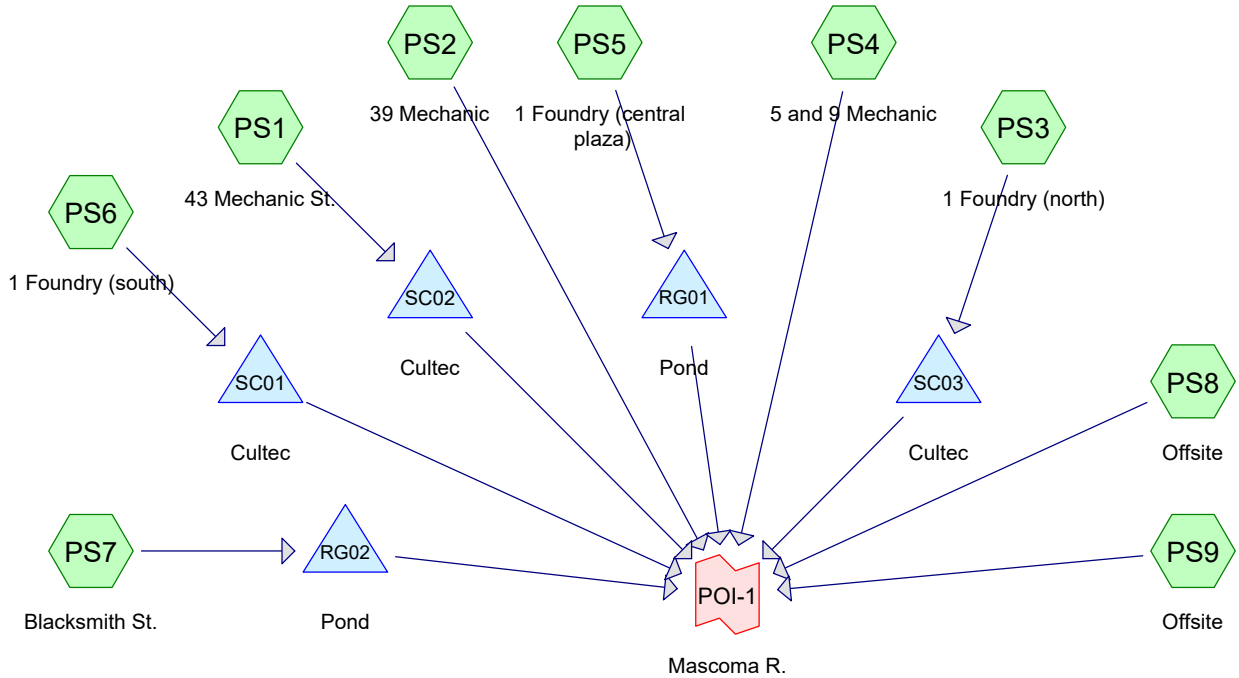
Summary for Link POI-2: Mechanic St.

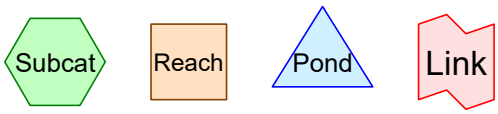
Inflow Area = 9,731 sf, 84.52% Impervious, Inflow Depth = 5.30" for 100-YR event
Inflow = 1.92 cfs @ 11.96 hrs, Volume= 4,295 cf
Primary = 1.92 cfs @ 11.96 hrs, Volume= 4,295 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link POI-2: Mechanic St.







Routing Diagram for 22122 1 Foundry Post
Prepared by Engineering Ventures, Inc, Printed 8/27/2024
HydroCAD® 10.20-2g s/n 02106 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
58,331	74	>75% Grass cover, Good, HSG C (PS1, PS2, PS3, PS4, PS5, PS6, PS7, PS8, PS9)
147,463	98	Paved parking, HSG C (PS1, PS2, PS3, PS4, PS5, PS6, PS7, PS9)
205,794	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
205,794	HSG C	PS1, PS2, PS3, PS4, PS5, PS6, PS7, PS8, PS9
0	HSG D	
0	Other	
205,794		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: 43 Mechanic St. Runoff Area=22,351 sf 57.56% Impervious Runoff Depth=1.37"
Tc=5.0 min CN=88 Runoff=1.30 cfs 2,557 cf

SubcatchmentPS2: 39 Mechanic Runoff Area=27,106 sf 60.41% Impervious Runoff Depth=1.37"
Tc=5.0 min CN=88 Runoff=1.57 cfs 3,101 cf

SubcatchmentPS3: 1 Foundry (north) Runoff Area=78,713 sf 80.26% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=93 Runoff=5.65 cfs 11,610 cf

SubcatchmentPS4: 5 and 9 Mechanic Runoff Area=8,542 sf 86.00% Impervious Runoff Depth=1.95"
Tc=5.0 min CN=95 Runoff=0.66 cfs 1,391 cf

SubcatchmentPS5: 1 Foundry (central Runoff Area=21,452 sf 55.54% Impervious Runoff Depth=1.30"
Tc=5.0 min CN=87 Runoff=1.19 cfs 2,329 cf

SubcatchmentPS6: 1 Foundry (south) Runoff Area=30,111 sf 94.73% Impervious Runoff Depth=2.15"
Tc=5.0 min CN=97 Runoff=2.44 cfs 5,404 cf

SubcatchmentPS7: Blacksmith St. Runoff Area=12,574 sf 42.70% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=84 Runoff=0.60 cfs 1,161 cf

SubcatchmentPS8: Offsite Runoff Area=1,592 sf 0.00% Impervious Runoff Depth=0.60"
Tc=5.0 min CN=74 Runoff=0.04 cfs 80 cf

SubcatchmentPS9: Offsite Runoff Area=3,353 sf 56.52% Impervious Runoff Depth=1.37"
Tc=5.0 min CN=88 Runoff=0.19 cfs 384 cf

Pond RG01: Pond Peak Elev=517.37' Storage=829 cf Inflow=1.19 cfs 2,329 cf
Outflow=0.15 cfs 2,329 cf

Pond RG02: Pond Peak Elev=511.62' Storage=414 cf Inflow=0.60 cfs 1,161 cf
Outflow=0.08 cfs 1,161 cf

Pond SC01: Cultec Peak Elev=516.49' Storage=2,434 cf Inflow=2.44 cfs 5,404 cf
Discarded=0.06 cfs 4,562 cf Primary=0.22 cfs 843 cf Outflow=0.28 cfs 5,404 cf

Pond SC02: Cultec Peak Elev=533.28' Storage=1,327 cf Inflow=1.30 cfs 2,557 cf
Discarded=0.04 cfs 2,557 cf Primary=0.00 cfs 0 cf Outflow=0.04 cfs 2,557 cf

Pond SC03: Cultec Peak Elev=521.71' Storage=3,586 cf Inflow=5.65 cfs 11,610 cf
Outflow=1.07 cfs 11,610 cf

Link POI-1: Mascoma R. Inflow=3.72 cfs 20,898 cf
Primary=3.72 cfs 20,898 cf

Total Runoff Area = 205,794 sf Runoff Volume = 28,017 cf Average Runoff Depth = 1.63"
28.34% Pervious = 58,331 sf 71.66% Impervious = 147,463 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: 43 Mechanic St. Runoff Area=22,351 sf 57.56% Impervious Runoff Depth=2.33"
Tc=5.0 min CN=88 Runoff=2.15 cfs 4,345 cf

SubcatchmentPS2: 39 Mechanic Runoff Area=27,106 sf 60.41% Impervious Runoff Depth=2.33"
Tc=5.0 min CN=88 Runoff=2.61 cfs 5,269 cf

SubcatchmentPS3: 1 Foundry (north) Runoff Area=78,713 sf 80.26% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=93 Runoff=8.68 cfs 18,383 cf

SubcatchmentPS4: 5 and 9 Mechanic Runoff Area=8,542 sf 86.00% Impervious Runoff Depth=3.01"
Tc=5.0 min CN=95 Runoff=0.98 cfs 2,141 cf

SubcatchmentPS5: 1 Foundry (central Runoff Area=21,452 sf 55.54% Impervious Runoff Depth=2.25"
Tc=5.0 min CN=87 Runoff=2.00 cfs 4,014 cf

SubcatchmentPS6: 1 Foundry (south) Runoff Area=30,111 sf 94.73% Impervious Runoff Depth=3.22"
Tc=5.0 min CN=97 Runoff=3.57 cfs 8,090 cf

SubcatchmentPS7: Blacksmith St. Runoff Area=12,574 sf 42.70% Impervious Runoff Depth=2.00"
Tc=5.0 min CN=84 Runoff=1.06 cfs 2,092 cf

SubcatchmentPS8: Offsite Runoff Area=1,592 sf 0.00% Impervious Runoff Depth=1.29"
Tc=5.0 min CN=74 Runoff=0.09 cfs 171 cf

SubcatchmentPS9: Offsite Runoff Area=3,353 sf 56.52% Impervious Runoff Depth=2.33"
Tc=5.0 min CN=88 Runoff=0.32 cfs 652 cf

Pond RG01: Pond Peak Elev=518.12' Storage=1,390 cf Inflow=2.00 cfs 4,014 cf
Outflow=0.87 cfs 4,014 cf

Pond RG02: Pond Peak Elev=512.23' Storage=641 cf Inflow=1.06 cfs 2,092 cf
Outflow=0.80 cfs 2,092 cf

Pond SC01: Cultec Peak Elev=517.39' Storage=3,393 cf Inflow=3.57 cfs 8,090 cf
Discarded=0.06 cfs 5,266 cf Primary=0.91 cfs 2,824 cf Outflow=0.97 cfs 8,090 cf

Pond SC02: Cultec Peak Elev=534.33' Storage=2,055 cf Inflow=2.15 cfs 4,345 cf
Discarded=0.04 cfs 3,651 cf Primary=0.17 cfs 694 cf Outflow=0.21 cfs 4,345 cf

Pond SC03: Cultec Peak Elev=523.09' Storage=6,123 cf Inflow=8.68 cfs 18,383 cf
Outflow=1.70 cfs 18,383 cf

Link POI-1: Mascoma R. Inflow=6.33 cfs 36,239 cf
Primary=6.33 cfs 36,239 cf

Total Runoff Area = 205,794 sf Runoff Volume = 45,156 cf Average Runoff Depth = 2.63"
28.34% Pervious = 58,331 sf 71.66% Impervious = 147,463 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: 43 Mechanic St. Runoff Area=22,351 sf 57.56% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=88 Runoff=2.81 cfs 5,761 cf

SubcatchmentPS2: 39 Mechanic Runoff Area=27,106 sf 60.41% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=88 Runoff=3.40 cfs 6,986 cf

SubcatchmentPS3: 1 Foundry (north) Runoff Area=78,713 sf 80.26% Impervious Runoff Depth=3.60"
Tc=5.0 min CN=93 Runoff=10.96 cfs 23,616 cf

SubcatchmentPS4: 5 and 9 Mechanic Runoff Area=8,542 sf 86.00% Impervious Runoff Depth=3.82"
Tc=5.0 min CN=95 Runoff=1.23 cfs 2,716 cf

SubcatchmentPS5: 1 Foundry (central Runoff Area=21,452 sf 55.54% Impervious Runoff Depth=3.00"
Tc=5.0 min CN=87 Runoff=2.63 cfs 5,357 cf

SubcatchmentPS6: 1 Foundry (south) Runoff Area=30,111 sf 94.73% Impervious Runoff Depth=4.04"
Tc=5.0 min CN=97 Runoff=4.42 cfs 10,136 cf

SubcatchmentPS7: Blacksmith St. Runoff Area=12,574 sf 42.70% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=84 Runoff=1.42 cfs 2,848 cf

SubcatchmentPS8: Offsite Runoff Area=1,592 sf 0.00% Impervious Runoff Depth=1.89"
Tc=5.0 min CN=74 Runoff=0.13 cfs 250 cf

SubcatchmentPS9: Offsite Runoff Area=3,353 sf 56.52% Impervious Runoff Depth=3.09"
Tc=5.0 min CN=88 Runoff=0.42 cfs 864 cf

Pond RG01: Pond Peak Elev=518.26' Storage=1,503 cf Inflow=2.63 cfs 5,357 cf
Outflow=2.23 cfs 5,357 cf

Pond RG02: Pond Peak Elev=512.29' Storage=668 cf Inflow=1.42 cfs 2,848 cf
Outflow=1.39 cfs 2,848 cf

Pond SC01: Cultec Peak Elev=518.22' Storage=4,196 cf Inflow=4.42 cfs 10,136 cf
Discarded=0.06 cfs 5,676 cf Primary=1.26 cfs 4,460 cf Outflow=1.31 cfs 10,136 cf

Pond SC02: Cultec Peak Elev=534.81' Storage=2,365 cf Inflow=2.81 cfs 5,761 cf
Discarded=0.04 cfs 3,954 cf Primary=1.03 cfs 1,806 cf Outflow=1.07 cfs 5,761 cf

Pond SC03: Cultec Peak Elev=524.26' Storage=7,991 cf Inflow=10.96 cfs 23,616 cf
Outflow=2.27 cfs 23,616 cf

Link POI-1: Mascoma R. Inflow=11.60 cfs 48,904 cf
Primary=11.60 cfs 48,904 cf

Total Runoff Area = 205,794 sf Runoff Volume = 58,535 cf Average Runoff Depth = 3.41"
28.34% Pervious = 58,331 sf 71.66% Impervious = 147,463 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: 43 Mechanic St. Runoff Area=22,351 sf 57.56% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=88 Runoff=3.40 cfs 7,064 cf

SubcatchmentPS2: 39 Mechanic Runoff Area=27,106 sf 60.41% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=88 Runoff=4.12 cfs 8,567 cf

SubcatchmentPS3: 1 Foundry (north) Runoff Area=78,713 sf 80.26% Impervious Runoff Depth=4.33"
Tc=5.0 min CN=93 Runoff=13.00 cfs 28,373 cf

SubcatchmentPS4: 5 and 9 Mechanic Runoff Area=8,542 sf 86.00% Impervious Runoff Depth=4.55"
Tc=5.0 min CN=95 Runoff=1.44 cfs 3,238 cf

SubcatchmentPS5: 1 Foundry (central Runoff Area=21,452 sf 55.54% Impervious Runoff Depth=3.69"
Tc=5.0 min CN=87 Runoff=3.20 cfs 6,596 cf

SubcatchmentPS6: 1 Foundry (south) Runoff Area=30,111 sf 94.73% Impervious Runoff Depth=4.78"
Tc=5.0 min CN=97 Runoff=5.18 cfs 11,986 cf

SubcatchmentPS7: Blacksmith St. Runoff Area=12,574 sf 42.70% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=84 Runoff=1.76 cfs 3,552 cf

SubcatchmentPS8: Offsite Runoff Area=1,592 sf 0.00% Impervious Runoff Depth=2.47"
Tc=5.0 min CN=74 Runoff=0.17 cfs 327 cf

SubcatchmentPS9: Offsite Runoff Area=3,353 sf 56.52% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=88 Runoff=0.51 cfs 1,060 cf

Pond RG01: Pond Peak Elev=518.32' Storage=1,560 cf Inflow=3.20 cfs 6,596 cf
Outflow=3.04 cfs 6,596 cf

Pond RG02: Pond Peak Elev=512.32' Storage=682 cf Inflow=1.76 cfs 3,552 cf
Outflow=1.74 cfs 3,552 cf

Pond SC01: Cultec Peak Elev=519.01' Storage=4,717 cf Inflow=5.18 cfs 11,986 cf
Discarded=0.06 cfs 5,969 cf Primary=3.00 cfs 6,017 cf Outflow=3.05 cfs 11,986 cf

Pond SC02: Cultec Peak Elev=535.39' Storage=2,704 cf Inflow=3.40 cfs 7,064 cf
Discarded=0.04 cfs 4,180 cf Primary=1.64 cfs 2,883 cf Outflow=1.68 cfs 7,063 cf

Pond SC03: Cultec Peak Elev=525.25' Storage=9,028 cf Inflow=13.00 cfs 28,373 cf
Outflow=6.91 cfs 28,373 cf

Link POI-1: Mascoma R. Inflow=18.70 cfs 60,614 cf
Primary=18.70 cfs 60,614 cf

Total Runoff Area = 205,794 sf Runoff Volume = 70,763 cf Average Runoff Depth = 4.13"
28.34% Pervious = 58,331 sf 71.66% Impervious = 147,463 sf

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPS1: 43 Mechanic St. Runoff Area=22,351 sf 57.56% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=88 Runoff=4.09 cfs 8,616 cf

SubcatchmentPS2: 39 Mechanic Runoff Area=27,106 sf 60.41% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=88 Runoff=4.96 cfs 10,449 cf

SubcatchmentPS3: 1 Foundry (north) Runoff Area=78,713 sf 80.26% Impervious Runoff Depth=5.18"
Tc=5.0 min CN=93 Runoff=15.39 cfs 33,995 cf

SubcatchmentPS4: 5 and 9 Mechanic Runoff Area=8,542 sf 86.00% Impervious Runoff Depth=5.41"
Tc=5.0 min CN=95 Runoff=1.70 cfs 3,852 cf

SubcatchmentPS5: 1 Foundry (central Runoff Area=21,452 sf 55.54% Impervious Runoff Depth=4.52"
Tc=5.0 min CN=87 Runoff=3.86 cfs 8,075 cf

SubcatchmentPS6: 1 Foundry (south) Runoff Area=30,111 sf 94.73% Impervious Runoff Depth=5.64"
Tc=5.0 min CN=97 Runoff=6.08 cfs 14,163 cf

SubcatchmentPS7: Blacksmith St. Runoff Area=12,574 sf 42.70% Impervious Runoff Depth=4.20"
Tc=5.0 min CN=84 Runoff=2.15 cfs 4,397 cf

SubcatchmentPS8: Offsite Runoff Area=1,592 sf 0.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=74 Runoff=0.21 cfs 423 cf

SubcatchmentPS9: Offsite Runoff Area=3,353 sf 56.52% Impervious Runoff Depth=4.63"
Tc=5.0 min CN=88 Runoff=0.61 cfs 1,293 cf

Pond RG01: Pond Peak Elev=518.38' Storage=1,606 cf Inflow=3.86 cfs 8,075 cf
Outflow=3.77 cfs 8,075 cf

Pond RG02: Pond Peak Elev=512.36' Storage=698 cf Inflow=2.15 cfs 4,397 cf
Outflow=2.13 cfs 4,397 cf

Pond SC01: Cultec Peak Elev=519.23' Storage=4,841 cf Inflow=6.08 cfs 14,163 cf
Discarded=0.06 cfs 6,226 cf Primary=5.51 cfs 7,937 cf Outflow=5.56 cfs 14,163 cf

Pond SC02: Cultec Peak Elev=536.06' Storage=2,985 cf Inflow=4.09 cfs 8,616 cf
Discarded=0.04 cfs 4,349 cf Primary=3.20 cfs 4,223 cf Outflow=3.24 cfs 8,572 cf

Pond SC03: Cultec Peak Elev=525.60' Storage=9,350 cf Inflow=15.39 cfs 33,995 cf
Outflow=13.11 cfs 33,995 cf

Link POI-1: Mascoma R. Inflow=33.65 cfs 74,643 cf
Primary=33.65 cfs 74,643 cf

Total Runoff Area = 205,794 sf Runoff Volume = 85,262 cf Average Runoff Depth = 4.97"
28.34% Pervious = 58,331 sf 71.66% Impervious = 147,463 sf

Summary for Subcatchment PS1: 43 Mechanic St.

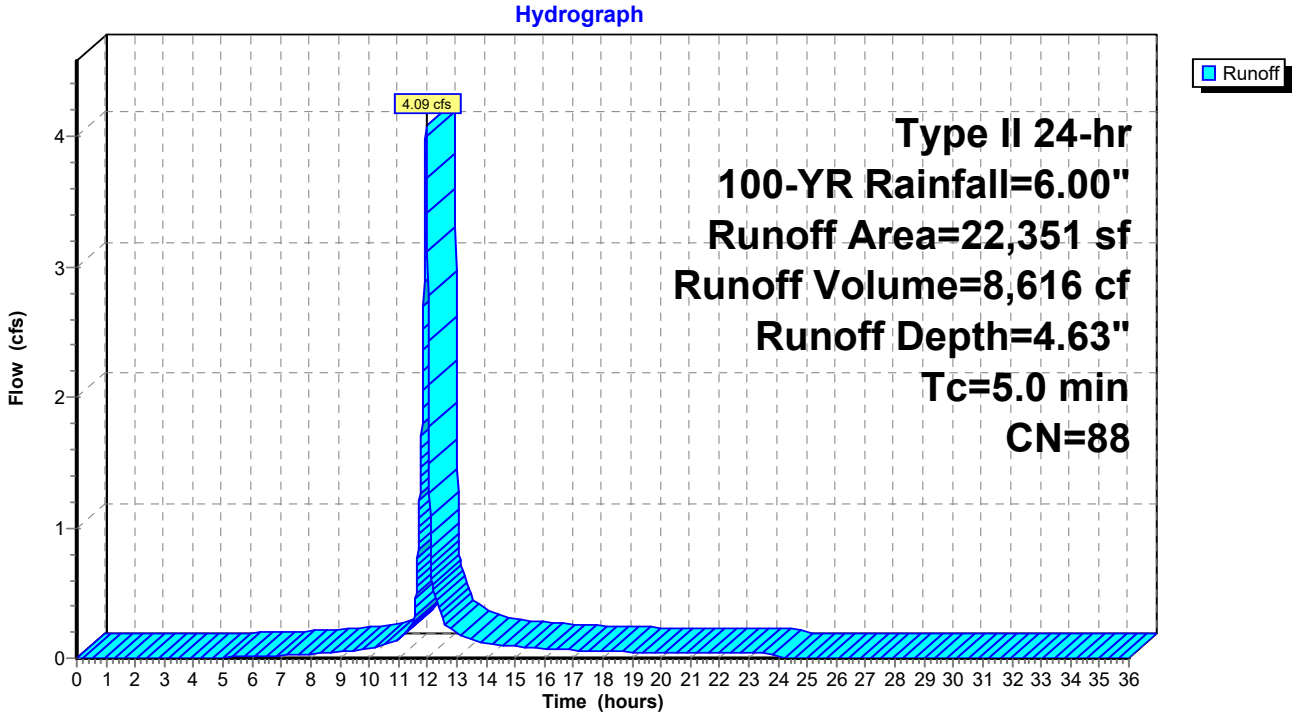
Runoff = 4.09 cfs @ 11.96 hrs, Volume= 8,616 cf, Depth= 4.63"
Routed to Pond SC02 : Cultec

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
9,486	74	>75% Grass cover, Good, HSG C
12,865	98	Paved parking, HSG C
22,351	88	Weighted Average
9,486		42.44% Pervious Area
12,865		57.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS1: 43 Mechanic St.



Summary for Subcatchment PS2: 39 Mechanic

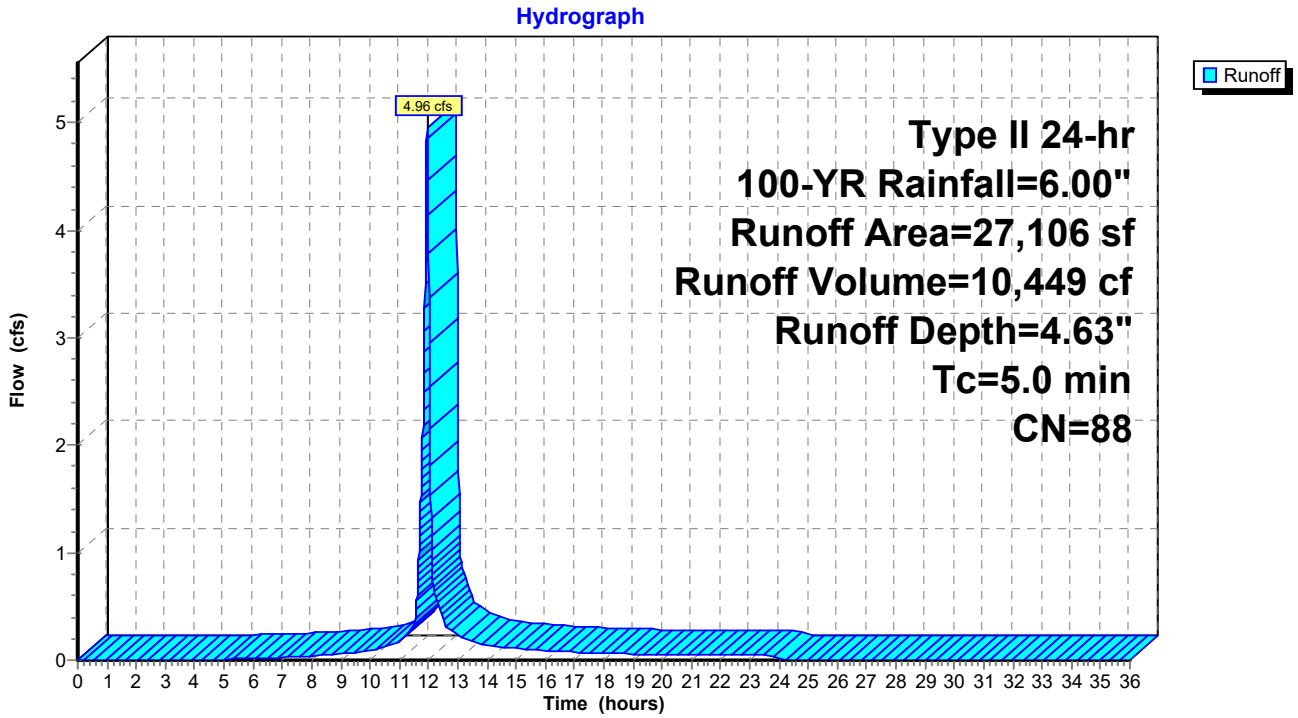
Runoff = 4.96 cfs @ 11.96 hrs, Volume= 10,449 cf, Depth= 4.63"
Routed to Link POI-1 : Mascoma R.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
10,732	74	>75% Grass cover, Good, HSG C
16,374	98	Paved parking, HSG C
27,106	88	Weighted Average
10,732		39.59% Pervious Area
16,374		60.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS2: 39 Mechanic



Summary for Subcatchment PS3: 1 Foundry (north)

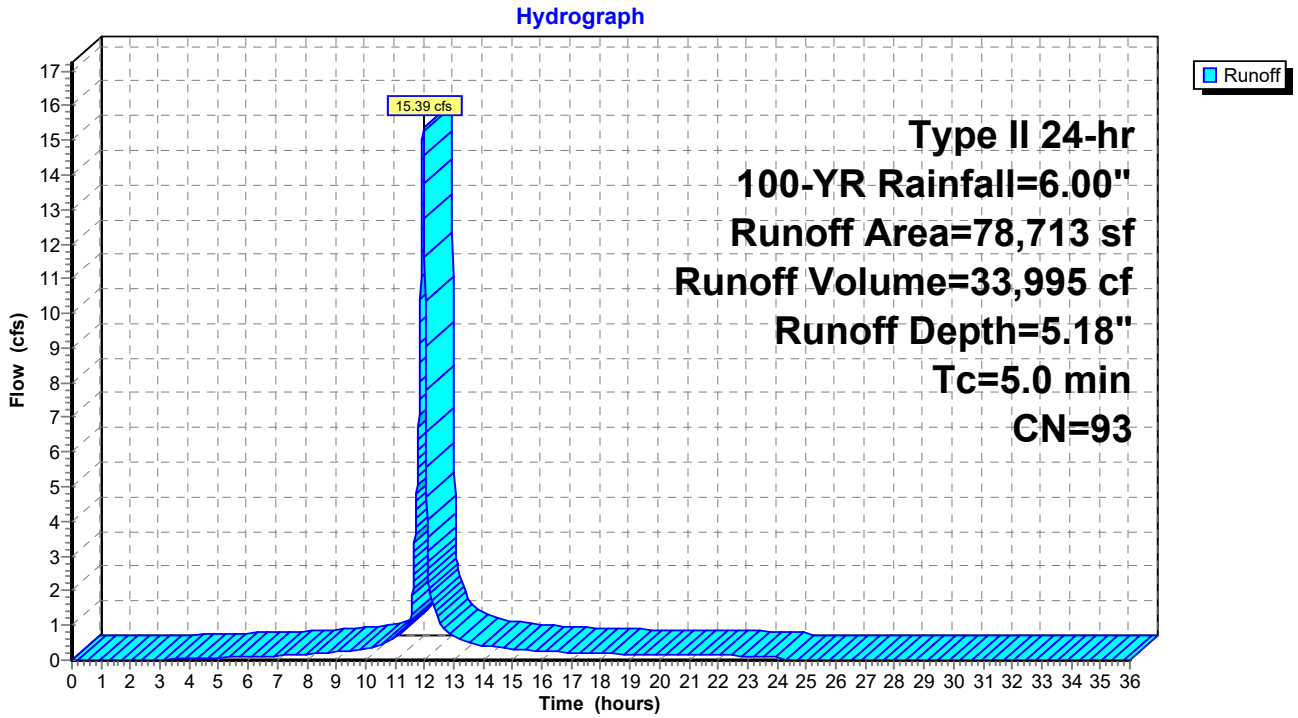
Runoff = 15.39 cfs @ 11.96 hrs, Volume= 33,995 cf, Depth= 5.18"
Routed to Pond SC03 : Cultec

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
15,539	74	>75% Grass cover, Good, HSG C
63,174	98	Paved parking, HSG C
78,713	93	Weighted Average
15,539		19.74% Pervious Area
63,174		80.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS3: 1 Foundry (north)



Summary for Subcatchment PS4: 5 and 9 Mechanic

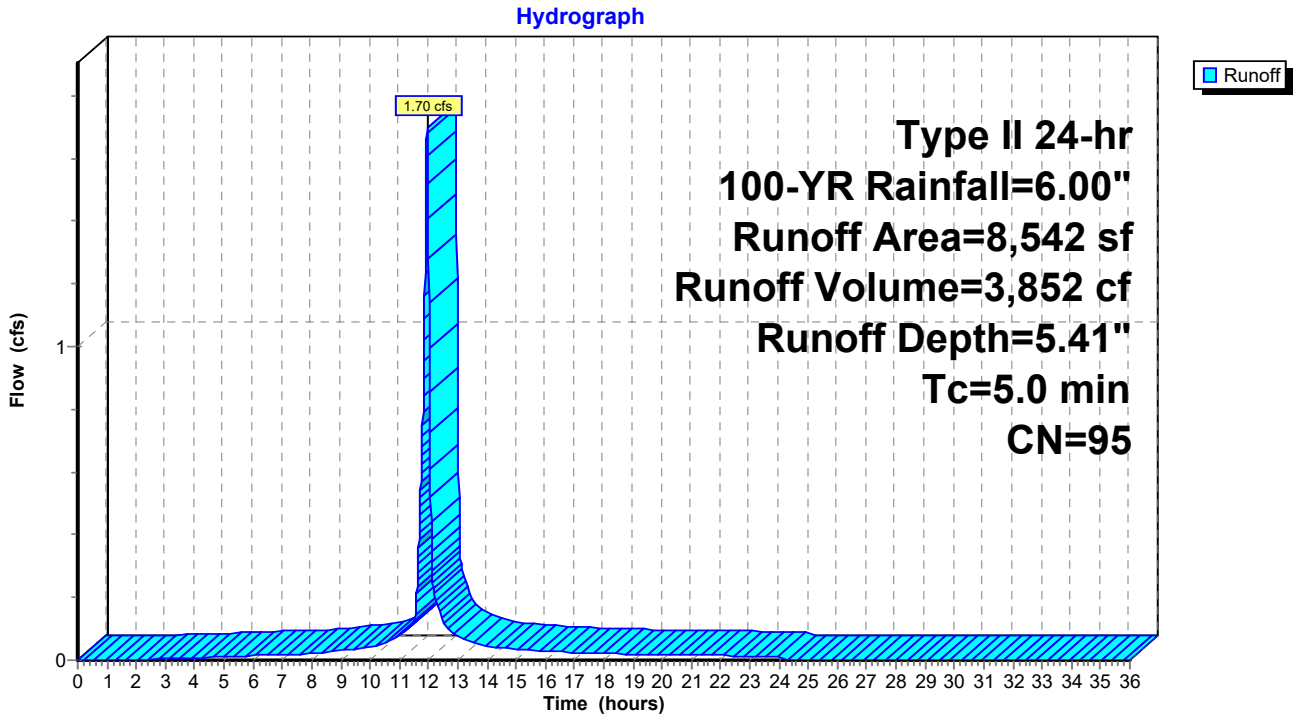
Runoff = 1.70 cfs @ 11.96 hrs, Volume= 3,852 cf, Depth= 5.41"
Routed to Link POI-1 : Mascoma R.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
1,196	74	>75% Grass cover, Good, HSG C
7,346	98	Paved parking, HSG C
8,542	95	Weighted Average
1,196		14.00% Pervious Area
7,346		86.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS4: 5 and 9 Mechanic



Summary for Subcatchment PS5: 1 Foundry (central plaza)

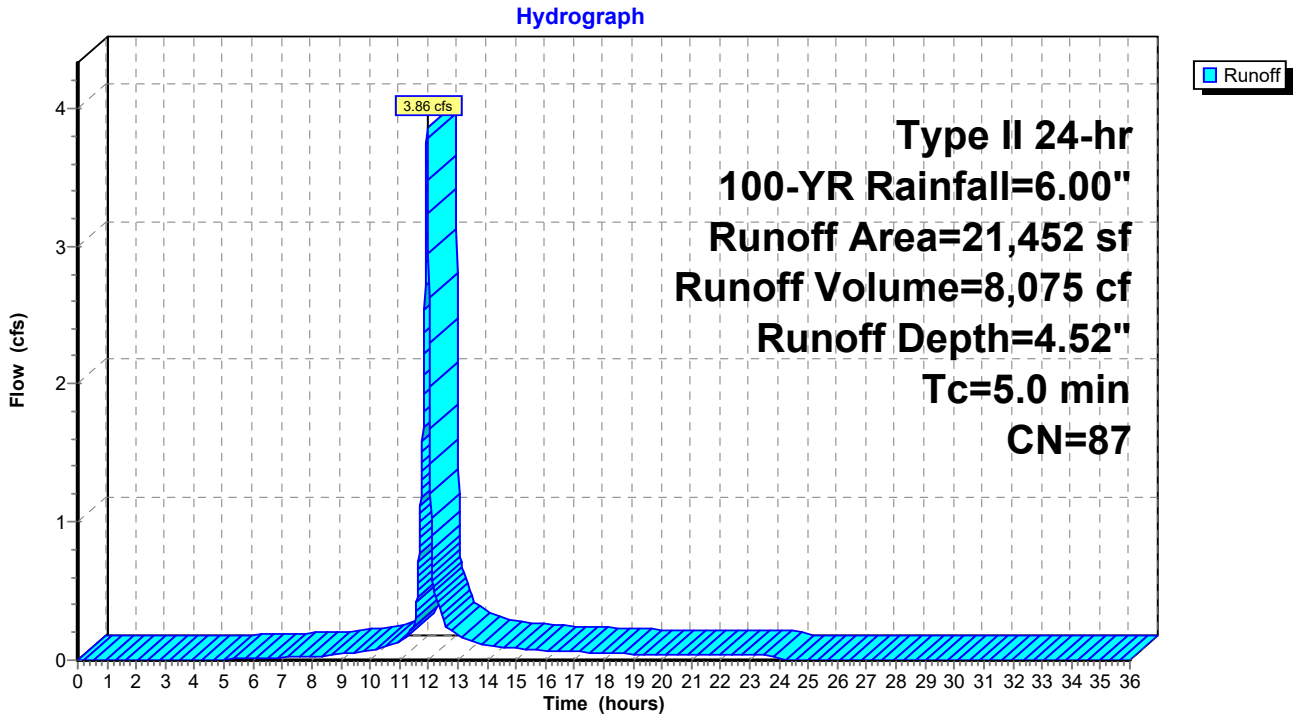
Runoff = 3.86 cfs @ 11.96 hrs, Volume= 8,075 cf, Depth= 4.52"
Routed to Pond RG01 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
9,537	74	>75% Grass cover, Good, HSG C
11,915	98	Paved parking, HSG C
21,452	87	Weighted Average
9,537		44.46% Pervious Area
11,915		55.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS5: 1 Foundry (central plaza)



Summary for Subcatchment PS6: 1 Foundry (south)

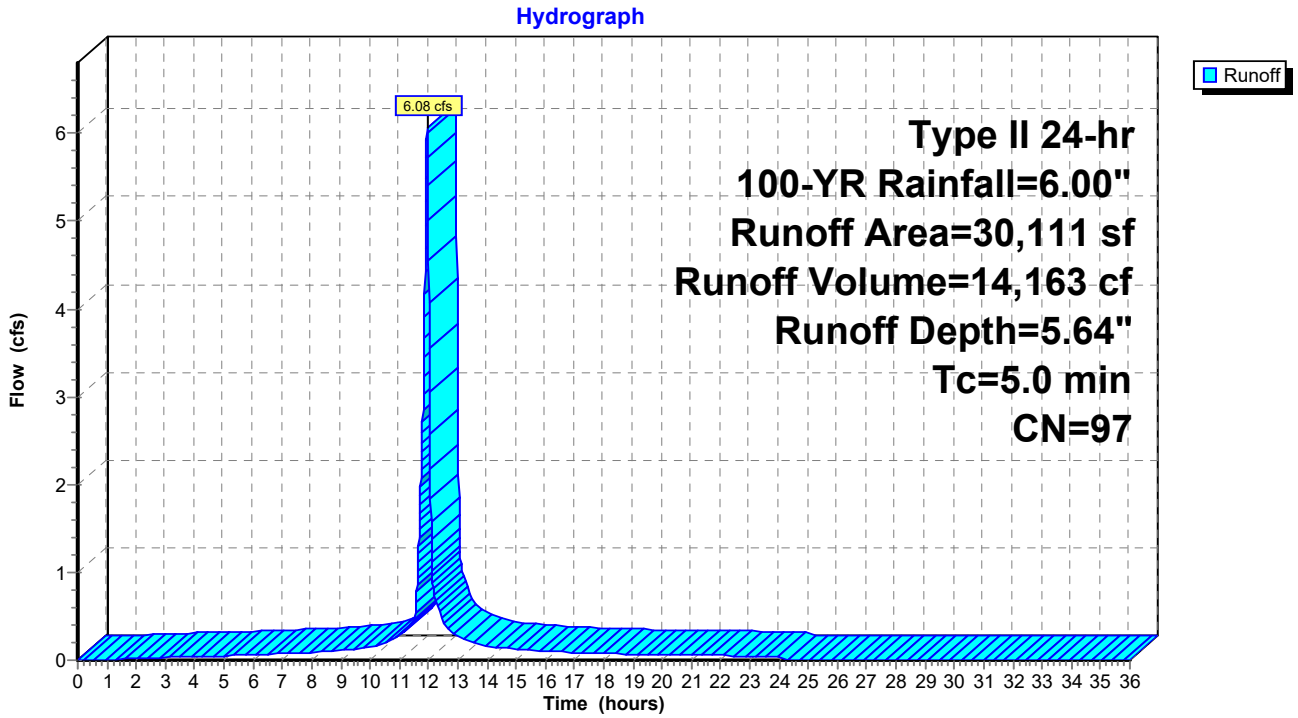
Runoff = 6.08 cfs @ 11.96 hrs, Volume= 14,163 cf, Depth= 5.64"
Routed to Pond SC01 : Cultec

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
1,586	74	>75% Grass cover, Good, HSG C
28,525	98	Paved parking, HSG C
30,111	97	Weighted Average
1,586		5.27% Pervious Area
28,525		94.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS6: 1 Foundry (south)



Summary for Subcatchment PS7: Blacksmith St.

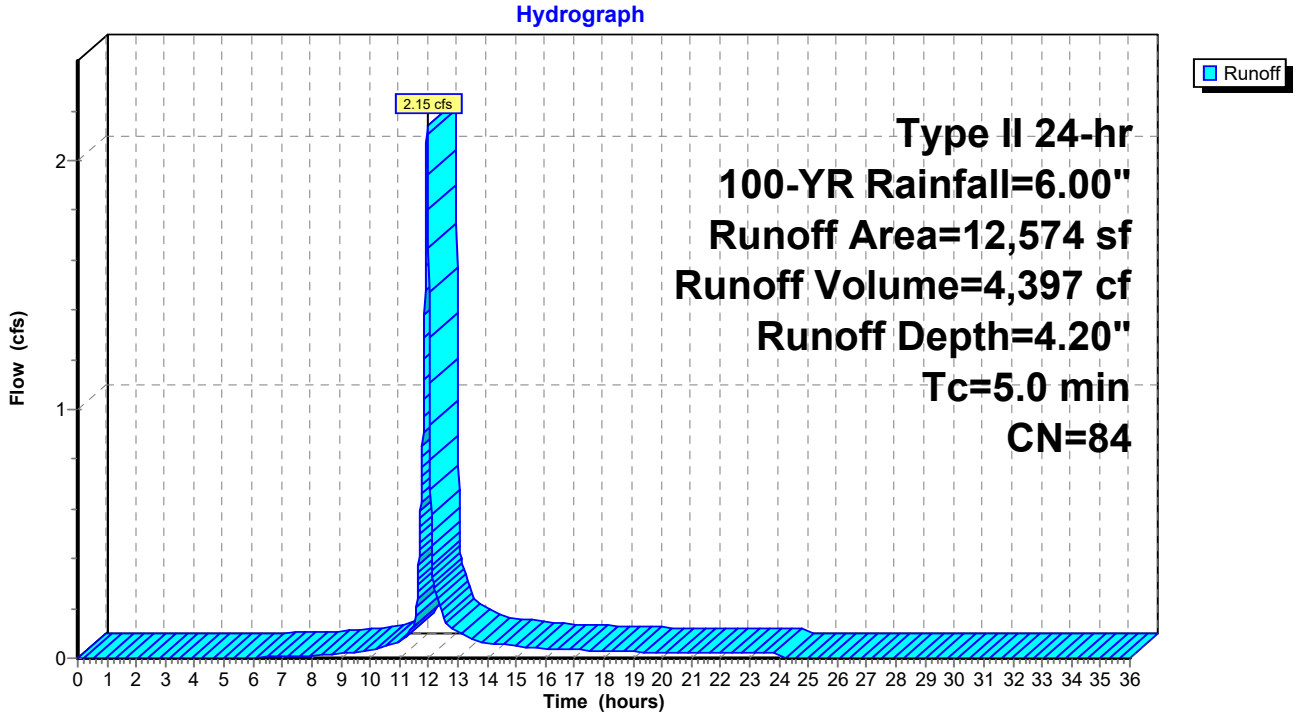
Runoff = 2.15 cfs @ 11.96 hrs, Volume= 4,397 cf, Depth= 4.20"
Routed to Pond RG02 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
7,205	74	>75% Grass cover, Good, HSG C
5,369	98	Paved parking, HSG C
12,574	84	Weighted Average
7,205		57.30% Pervious Area
5,369		42.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS7: Blacksmith St.



Summary for Subcatchment PS8: Offsite

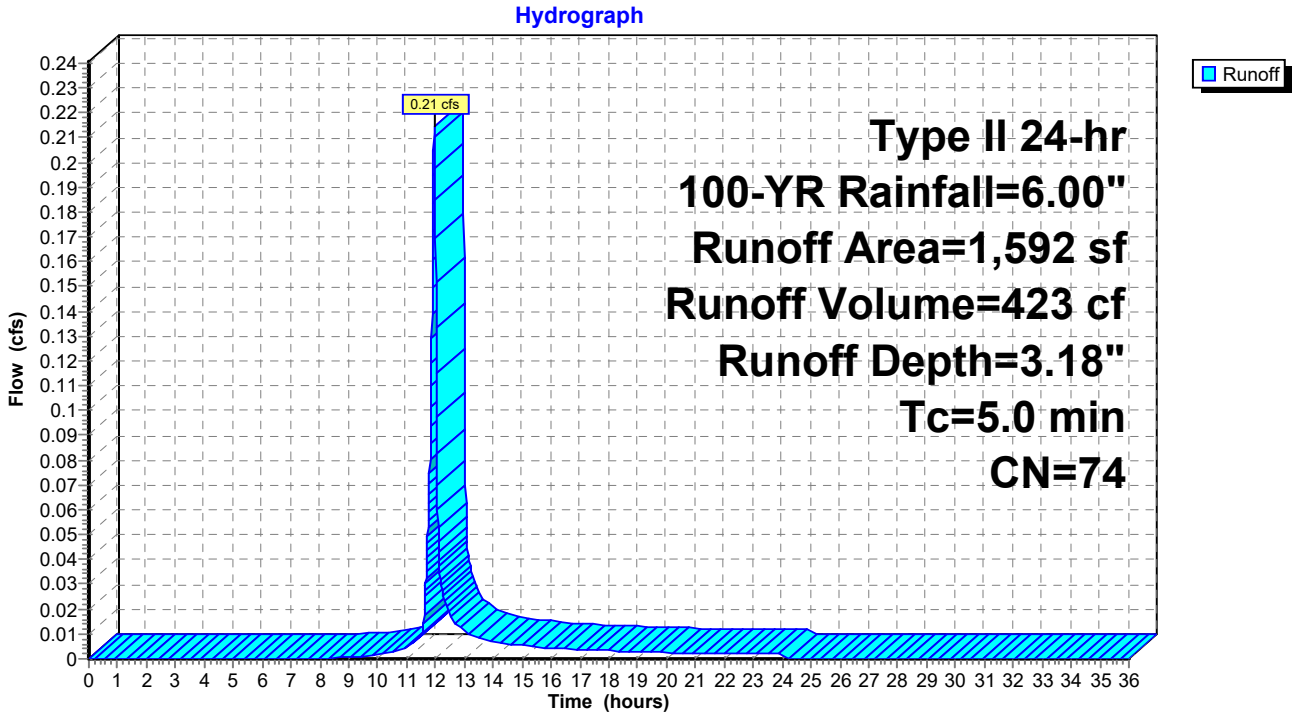
Runoff = 0.21 cfs @ 11.96 hrs, Volume= 423 cf, Depth= 3.18"
Routed to Link POI-1 : Mascoma R.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
1,592	74	>75% Grass cover, Good, HSG C
1,592		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS8: Offsite



Summary for Subcatchment PS9: Offsite

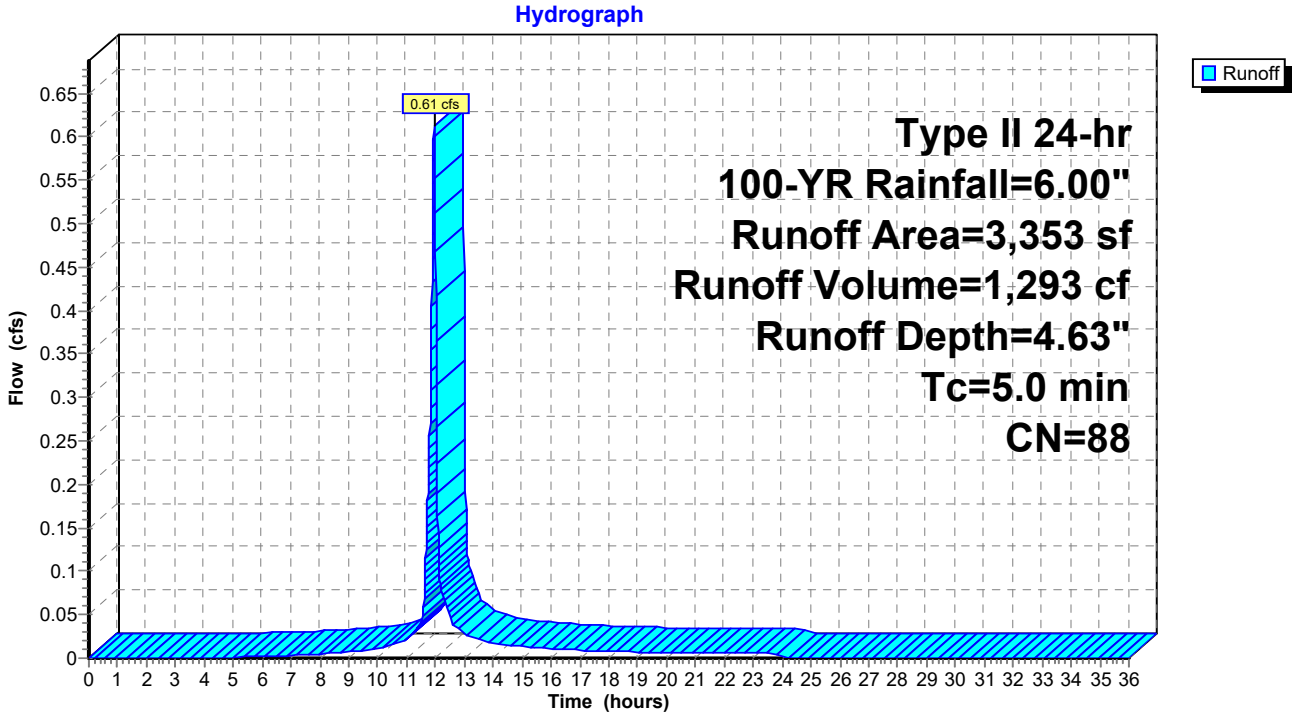
Runoff = 0.61 cfs @ 11.96 hrs, Volume= 1,293 cf, Depth= 4.63"
Routed to Link POI-1 : Mascoma R.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-YR Rainfall=6.00"

Area (sf)	CN	Description
1,458	74	>75% Grass cover, Good, HSG C
1,895	98	Paved parking, HSG C
3,353	88	Weighted Average
1,458		43.48% Pervious Area
1,895		56.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PS9: Offsite



Summary for Pond RG01: Pond

Inflow Area = 21,452 sf, 55.54% Impervious, Inflow Depth = 4.52" for 100-YR event
Inflow = 3.86 cfs @ 11.96 hrs, Volume= 8,075 cf
Outflow = 3.77 cfs @ 11.97 hrs, Volume= 8,075 cf, Atten= 3%, Lag= 1.0 min
Primary = 3.77 cfs @ 11.97 hrs, Volume= 8,075 cf
Routed to Link POI-1 : Mascoma R.

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 518.38' @ 11.97 hrs Surf.Area= 886 sf Storage= 1,606 cf

Plug-Flow detention time= 44.5 min calculated for 8,073 cf (100% of inflow)
Center-of-Mass det. time= 44.5 min (835.0 - 790.5)

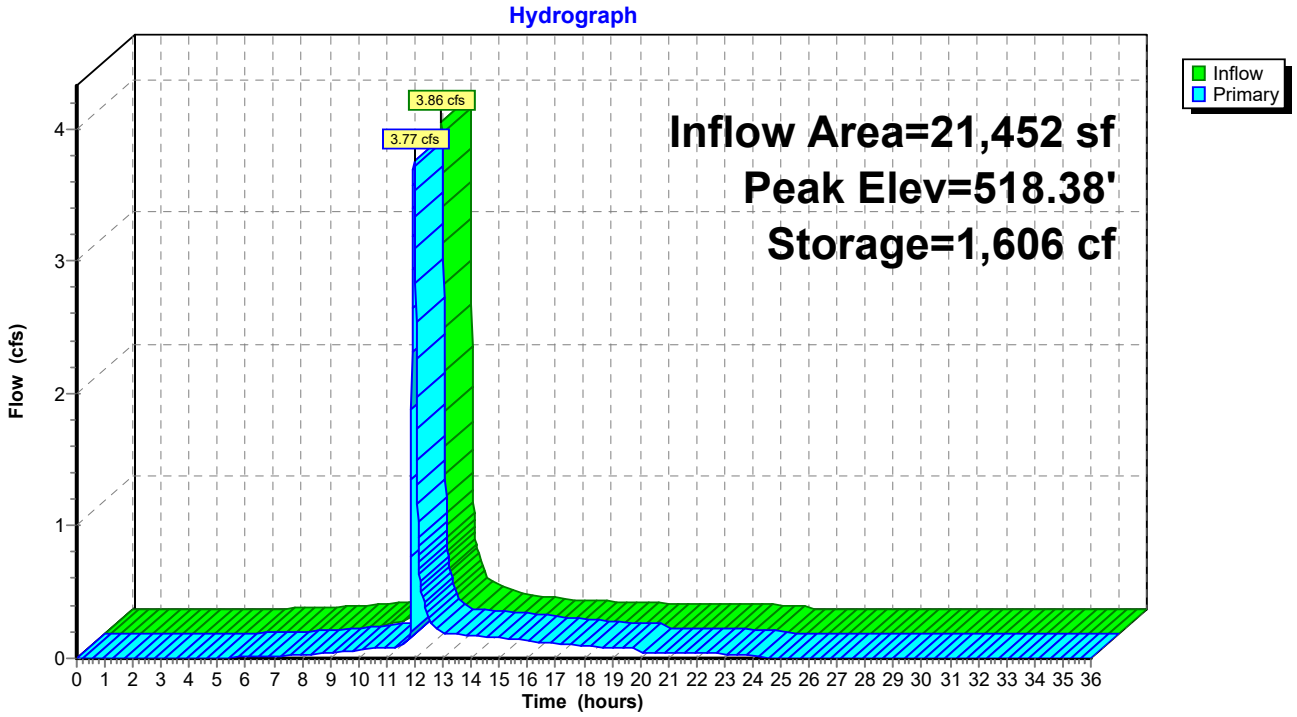
Volume	Invert	Avail.Storage	Storage Description
#1	514.50'	3,348 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
514.50	338	0.0	0	0
516.00	338	30.0	152	152
520.00	1,260	100.0	3,196	3,348

Device	Routing	Invert	Outlet Devices
#1	Primary	514.00'	**18.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 514.00' / 510.00' S= 0.0364 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	518.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	514.50'	**10.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=3.75 cfs @ 11.97 hrs HW=518.38' (Free Discharge)
└─**1=Culvert** (Passes 3.75 cfs of 16.20 cfs potential flow)
  ├─**2=Orifice/Grate** (Weir Controls 3.55 cfs @ 2.00 fps)
  └─**3=Exfiltration** (Exfiltration Controls 0.20 cfs)

Pond RG01: Pond



Summary for Pond RG02: Pond

Inflow Area = 12,574 sf, 42.70% Impervious, Inflow Depth = 4.20" for 100-YR event
Inflow = 2.15 cfs @ 11.96 hrs, Volume= 4,397 cf
Outflow = 2.13 cfs @ 11.97 hrs, Volume= 4,397 cf, Atten= 1%, Lag= 0.6 min
Primary = 2.13 cfs @ 11.97 hrs, Volume= 4,397 cf
Routed to Link POI-1 : Mascoma R.

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 512.36' @ 11.97 hrs Surf.Area= 437 sf Storage= 698 cf

Plug-Flow detention time= 42.6 min calculated for 4,396 cf (100% of inflow)
Center-of-Mass det. time= 42.5 min (842.0 - 799.4)

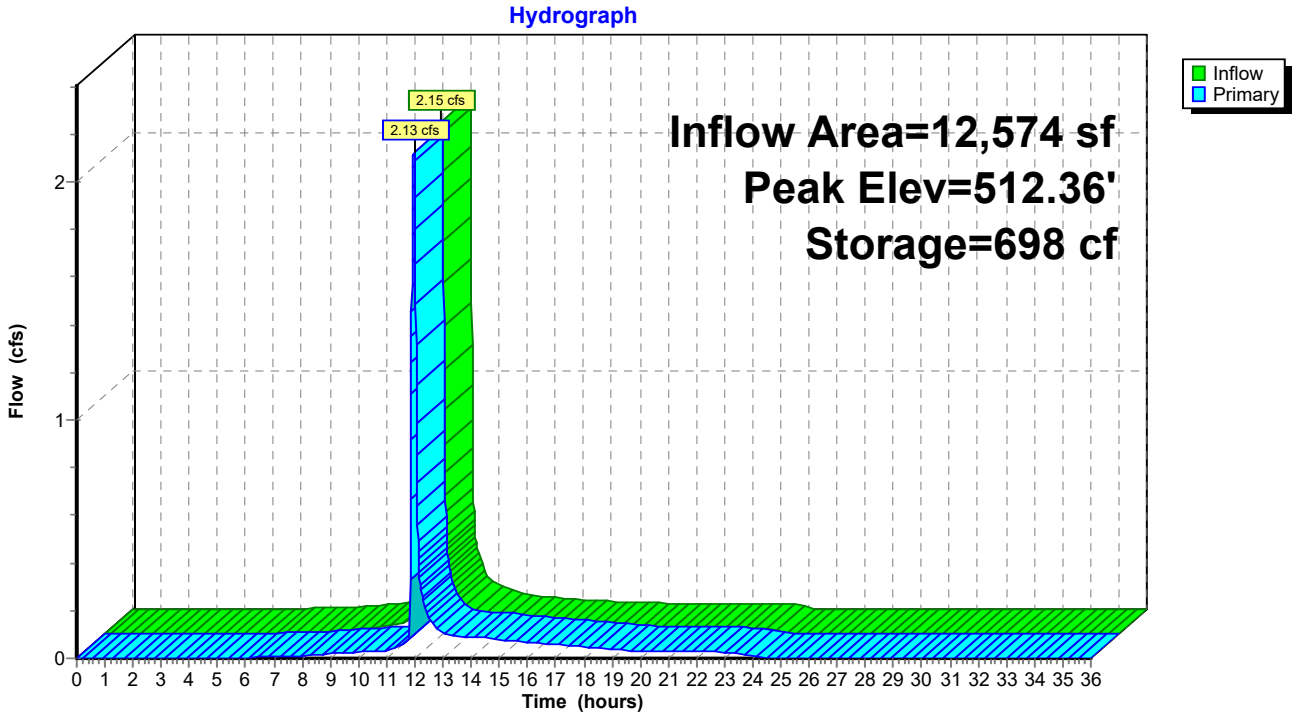
Volume	Invert	Avail.Storage	Storage Description
#1	508.50'	1,600 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
508.50	112	0.0	0	0
510.00	112	30.0	50	50
514.00	663	100.0	1,550	1,600

Device	Routing	Invert	Outlet Devices
#1	Primary	507.50'	**18.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 507.50' / 507.00' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	508.50'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 1	512.10'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.12 cfs @ 11.97 hrs HW=512.36' (Free Discharge)
└─**1=Culvert** (Passes 2.12 cfs of 17.25 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.10 cfs)
  └─**3=Orifice/Grate** (Weir Controls 2.02 cfs @ 1.66 fps)

Pond RG02: Pond



Summary for Pond SC01: Cultec

Inflow Area = 30,111 sf, 94.73% Impervious, Inflow Depth = 5.64" for 100-YR event
Inflow = 6.08 cfs @ 11.96 hrs, Volume= 14,163 cf
Outflow = 5.56 cfs @ 11.99 hrs, Volume= 14,163 cf, Atten= 8%, Lag= 1.8 min
Discarded = 0.06 cfs @ 5.70 hrs, Volume= 6,226 cf
Primary = 5.51 cfs @ 11.99 hrs, Volume= 7,937 cf
Routed to Link POI-1 : Mascoma R.

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 519.23' @ 11.99 hrs Surf.Area= 1,419 sf Storage= 4,841 cf

Plug-Flow detention time= 180.2 min calculated for 14,163 cf (100% of inflow)
Center-of-Mass det. time= 180.2 min (927.4 - 747.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	514.00'	2,014 cf	**23.00'W x 61.70'L x 5.75'H Field A** 8,160 cf Overall - 3,124 cf Embedded = 5,036 cf x 40.0% Voids
#2A	514.75'	3,124 cf	**Cultec R-902HD** x 48 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 48 Chambers in 3 Rows Cap Storage= 2.8 cf x 2 x 3 rows = 16.6 cf
		5,138 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	513.80'	**18.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 513.80' / 510.00' S= 0.0345 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Discarded	514.00'	**1.695 in/hr Exfiltration over Surface area**
#3	Device 1	516.20'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	518.75'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.06 cfs @ 5.70 hrs HW=514.06' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=5.48 cfs @ 11.99 hrs HW=519.23' (Free Discharge)
└─**1=Culvert** (Passes 5.48 cfs of 18.40 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 1.57 cfs @ 8.02 fps)
  └─**4=Broad-Crested Rectangular Weir**(Weir Controls 3.90 cfs @ 2.05 fps)

Pond SC01: Cultec - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= 2.8 cf x 2 x 3 rows = 16.6 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

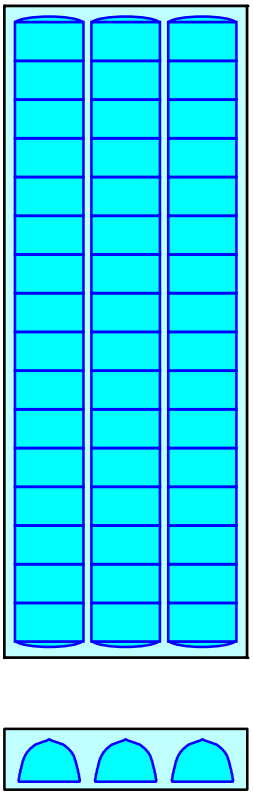
16 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 59.70' Row Length +12.0" End Stone x 2 = 61.70' Base Length
3 Rows x 78.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 23.00' Base Width
9.0" Stone Base + 48.0" Chamber Height + 12.0" Stone Cover = 5.75' Field Height

48 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 3 Rows = 3,123.8 cf Chamber Storage

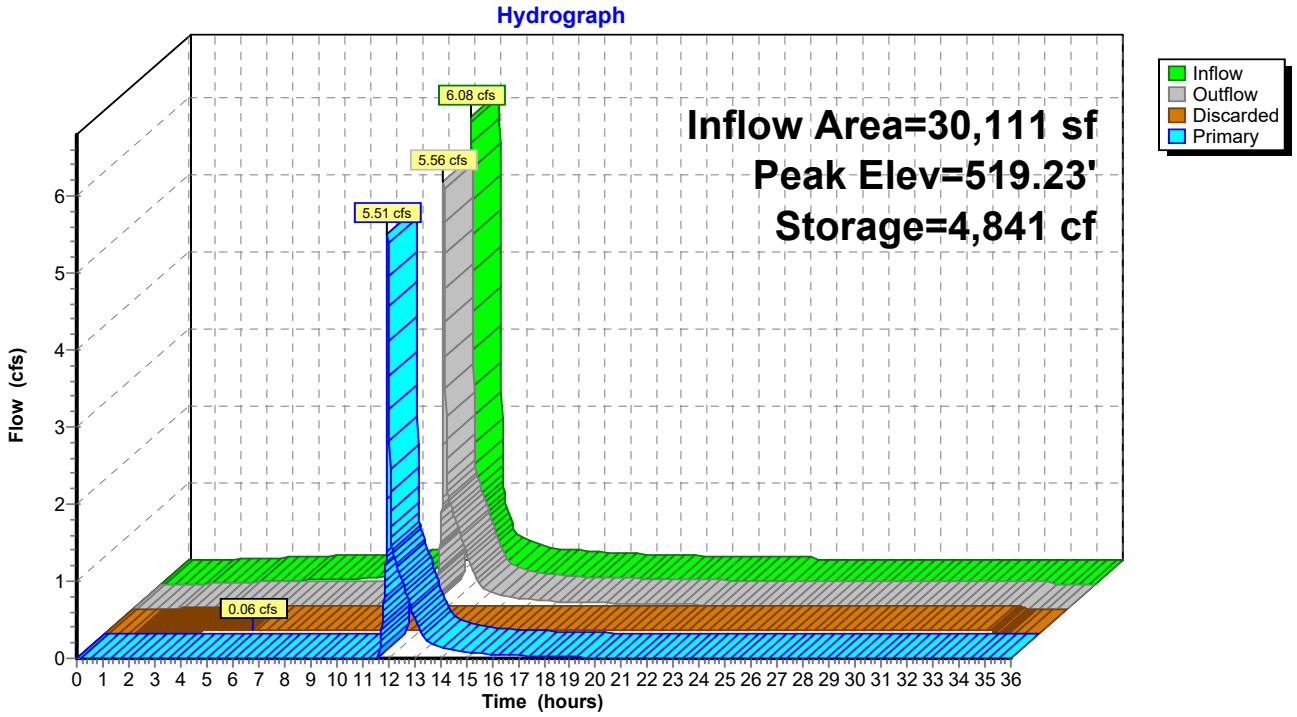
8,159.8 cf Field - 3,123.8 cf Chambers = 5,036.0 cf Stone x 40.0% Voids = 2,014.4 cf Stone Storage

Chamber Storage + Stone Storage = 5,138.2 cf = 0.118 af
Overall Storage Efficiency = 63.0%
Overall System Size = 61.70' x 23.00' x 5.75'

48 Chambers
302.2 cy Field
186.5 cy Stone



Pond SC01: Cultec



Summary for Pond SC02: Cultec

Inflow Area = 22,351 sf, 57.56% Impervious, Inflow Depth = 4.63" for 100-YR event
Inflow = 4.09 cfs @ 11.96 hrs, Volume= 8,616 cf
Outflow = 3.24 cfs @ 12.01 hrs, Volume= 8,572 cf, Atten= 21%, Lag= 3.0 min
Discarded = 0.04 cfs @ 8.79 hrs, Volume= 4,349 cf
Primary = 3.20 cfs @ 12.01 hrs, Volume= 4,223 cf
Routed to Link POI-1 : Mascoma R.

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 536.06' @ 12.01 hrs Surf.Area= 913 sf Storage= 2,985 cf

Plug-Flow detention time= 248.4 min calculated for 8,569 cf (99% of inflow)
Center-of-Mass det. time= 245.2 min (1,032.5 - 787.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	531.10'	1,317 cf	**23.00'W x 39.70'L x 5.75'H Field A** 5,250 cf Overall - 1,959 cf Embedded = 3,292 cf x 40.0% Voids
#2A	531.85'	1,959 cf	**Cultec R-902HD** x 30 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 30 Chambers in 3 Rows Cap Storage= 2.8 cf x 2 x 3 rows = 16.6 cf
		3,275 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	519.00'	**18.0" Round Culvert** L= 56.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 519.00' / 518.00' S= 0.0179 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Discarded	531.10'	**1.965 in/hr Exfiltration over Surface area**
#3	Device 1	534.10'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	535.85'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.04 cfs @ 8.79 hrs HW=531.16' (Free Discharge)
└─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=3.17 cfs @ 12.01 hrs HW=536.05' (Free Discharge)
└─**1=Culvert** (Passes 3.17 cfs of 34.36 cfs potential flow)
  ├─**3=Orifice/Grate** (Orifice Controls 2.14 cfs @ 6.13 fps)
  └─**4=Broad-Crested Rectangular Weir** (Weir Controls 1.03 cfs @ 1.27 fps)

Pond SC02: Cultec - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= 2.8 cf x 2 x 3 rows = 16.6 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

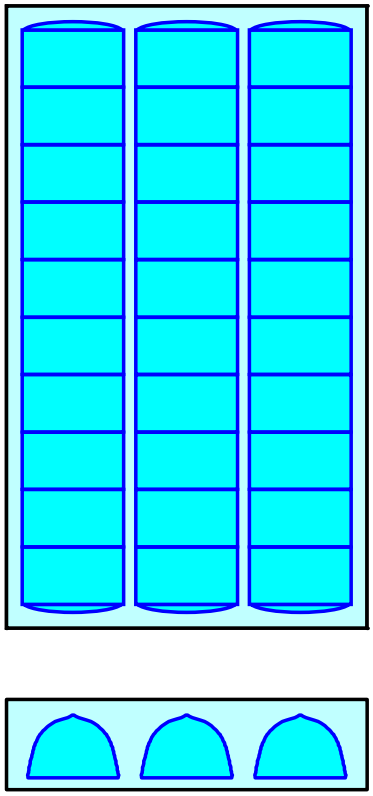
10 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 37.70' Row Length +12.0" End Stone x 2 = 39.70' Base Length
3 Rows x 78.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 23.00' Base Width
9.0" Stone Base + 48.0" Chamber Height + 12.0" Stone Cover = 5.75' Field Height

30 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 3 Rows = 1,958.6 cf Chamber Storage

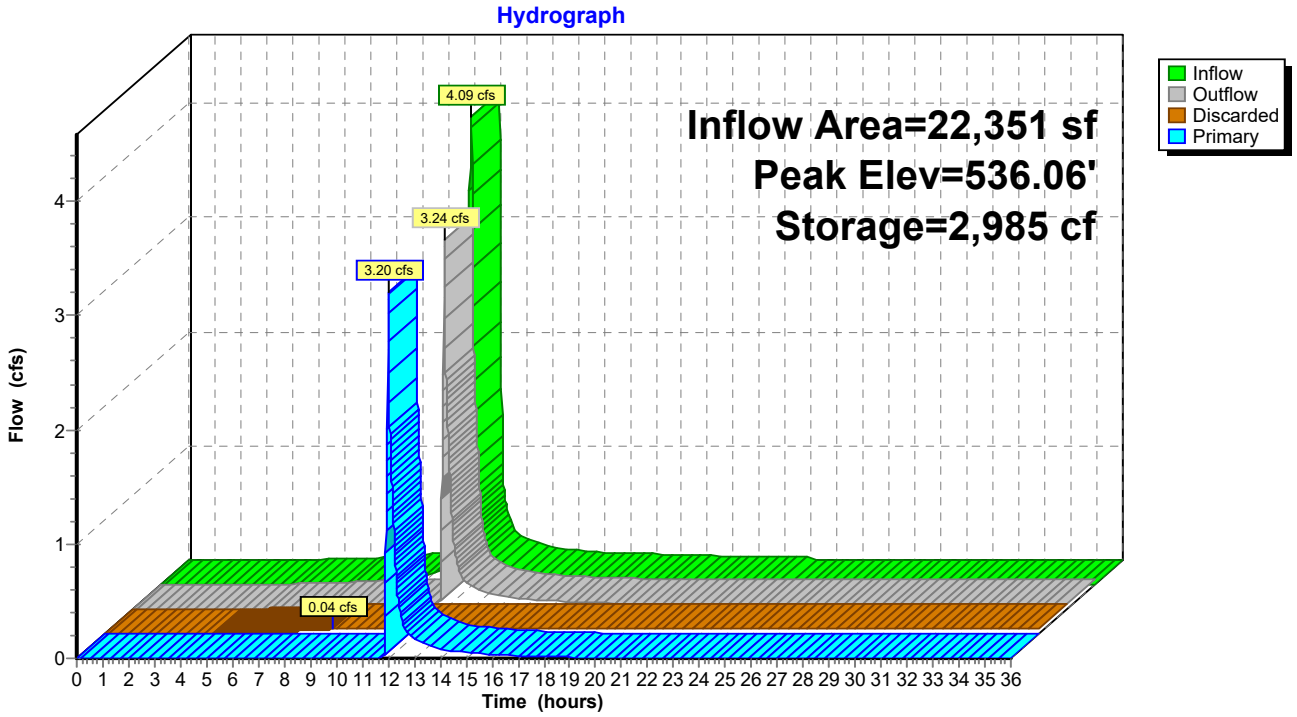
5,250.3 cf Field - 1,958.6 cf Chambers = 3,291.7 cf Stone x 40.0% Voids = 1,316.7 cf Stone Storage

Chamber Storage + Stone Storage = 3,275.3 cf = 0.075 af
Overall Storage Efficiency = 62.4%
Overall System Size = 39.70' x 23.00' x 5.75'

30 Chambers
194.5 cy Field
121.9 cy Stone



Pond SC02: Cultec



Summary for Pond SC03: Cultec

Inflow Area = 78,713 sf, 80.26% Impervious, Inflow Depth = 5.18" for 100-YR event
Inflow = 15.39 cfs @ 11.96 hrs, Volume= 33,995 cf
Outflow = 13.11 cfs @ 12.00 hrs, Volume= 33,995 cf, Atten= 15%, Lag= 2.5 min
Primary = 13.11 cfs @ 12.00 hrs, Volume= 33,995 cf
Routed to Link POI-1 : Mascoma R.

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 525.60' @ 12.00 hrs Surf.Area= 4,628 sf Storage= 9,350 cf

Plug-Flow detention time= 30.6 min calculated for 33,985 cf (100% of inflow)
Center-of-Mass det. time= 30.6 min (799.2 - 768.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	520.00'	3,239 cf	**37.50'W x 61.70'L x 5.75'H Field A** 13,304 cf Overall - 5,206 cf Embedded = 8,098 cf x 40.0% Voids
#2A	520.75'	5,206 cf	**Cultec R-902HD** x 80 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 80 Chambers in 5 Rows Cap Storage= 2.8 cf x 2 x 5 rows = 27.6 cf
#3	518.50'	1,041 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		9,487 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
518.50	2,314	0.0	0	0
520.00	2,314	30.0	1,041	1,041

Device	Routing	Invert	Outlet Devices
#1	Primary	516.00'	**18.0" Round Culvert** L= 110.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 516.00' / 514.00' S= 0.0182 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	518.50'	**10.000 in/hr Exfiltration over Surface area**
#3	Device 1	522.40'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	524.75'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=13.05 cfs @ 12.00 hrs HW=525.60' (Free Discharge)
└─**1=Culvert** (Passes 13.05 cfs of 24.05 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 1.07 cfs)
  ├─**3=Orifice/Grate** (Orifice Controls 1.62 cfs @ 8.27 fps)
  └─**4=Broad-Crested Rectangular Weir** (Weir Controls 10.35 cfs @ 3.05 fps)

Pond SC03: Cultec - Chamber Wizard Field A

Chamber Model = Cultec R-902HD (Cultec Recharger® 902HD)
Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf
Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap
Cap Storage= 2.8 cf x 2 x 5 rows = 27.6 cf

78.0" Wide + 9.0" Spacing = 87.0" C-C Row Spacing

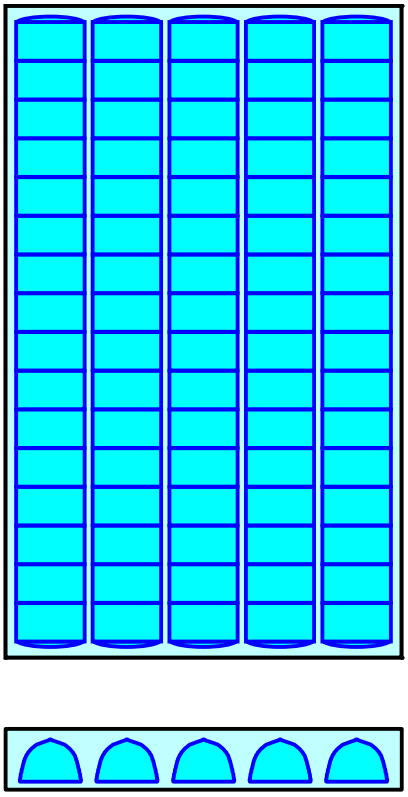
16 Chambers/Row x 3.67' Long +0.52' Cap Length x 2 = 59.70' Row Length +12.0" End Stone x 2 = 61.70' Base Length
5 Rows x 78.0" Wide + 9.0" Spacing x 4 + 12.0" Side Stone x 2 = 37.50' Base Width
9.0" Stone Base + 48.0" Chamber Height + 12.0" Stone Cover = 5.75' Field Height

80 Chambers x 64.7 cf + 2.8 cf Cap Volume x 2 x 5 Rows = 5,206.4 cf Chamber Storage

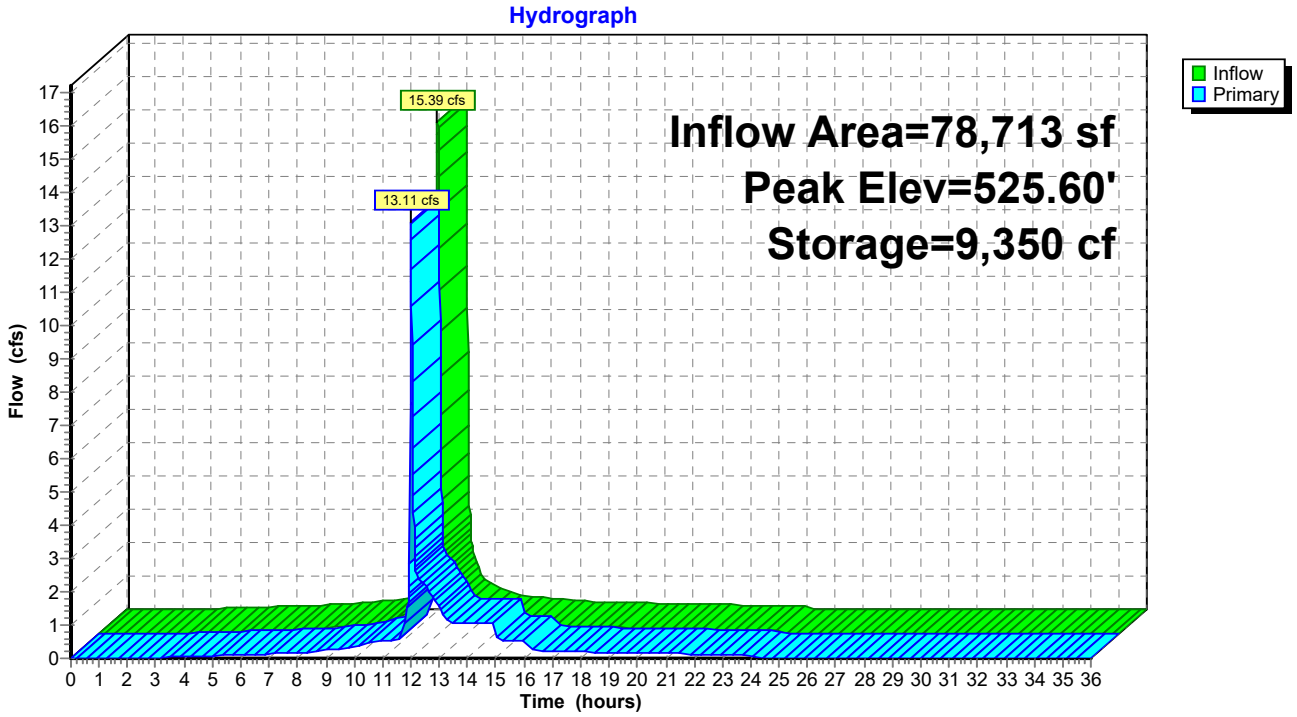
13,304.1 cf Field - 5,206.4 cf Chambers = 8,097.7 cf Stone x 40.0% Voids = 3,239.1 cf Stone Storage

Chamber Storage + Stone Storage = 8,445.5 cf = 0.194 af
Overall Storage Efficiency = 63.5%
Overall System Size = 61.70' x 37.50' x 5.75'

80 Chambers
492.7 cy Field
299.9 cy Stone



Pond SC03: Cultec

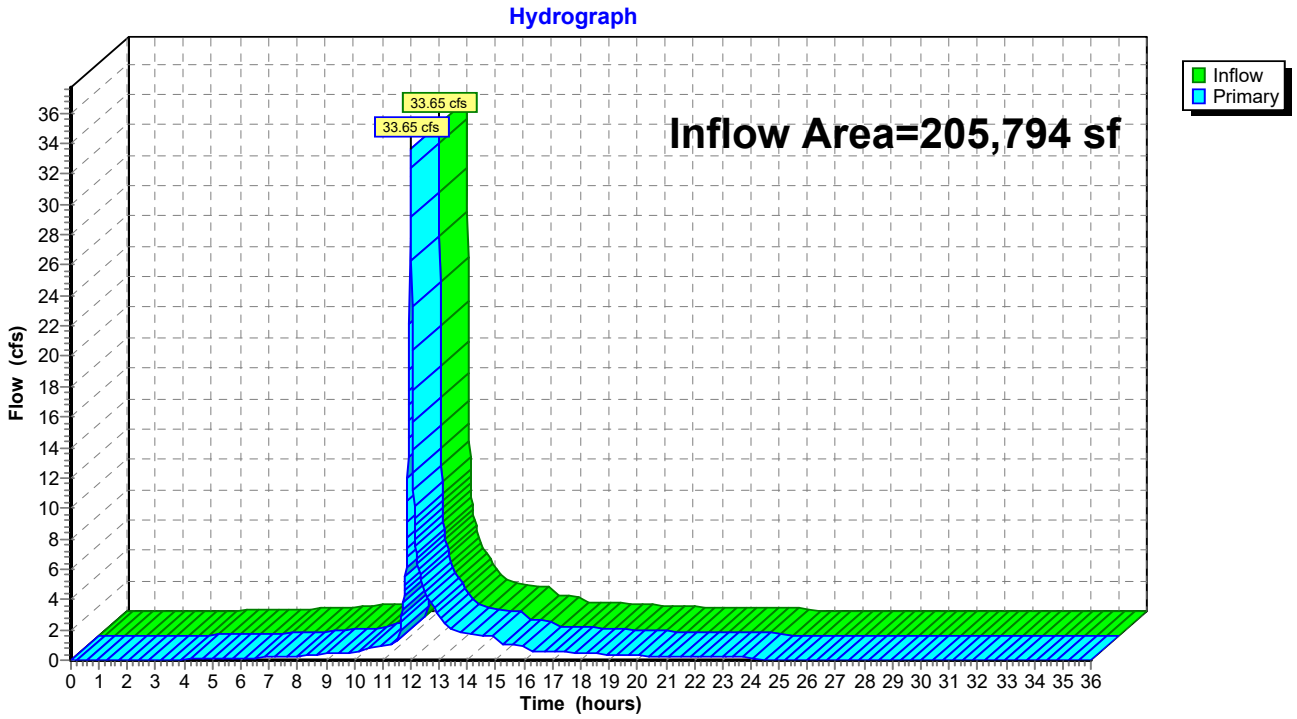


Summary for Link POI-1: Mascoma R.

Inflow Area = 205,794 sf, 71.66% Impervious, Inflow Depth = 4.35" for 100-YR event
Inflow = 33.65 cfs @ 11.99 hrs, Volume= 74,643 cf
Primary = 33.65 cfs @ 11.99 hrs, Volume= 74,643 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link POI-1: Mascoma R.



NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **SC01 - 1 Foundry (South)**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	**← yes**
0.69	ac	A = Area draining to the practice	
0.65	ac	A_I = Impervious area draining to the practice	
0.95	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.90	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.62	ac-in	WQV= 1" x Rv x A	
2,265	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
566	cf	25% x WQV (check calc for sediment forebay volume)	
Isolation Row		Method of pretreatment? (not required for clean or roof runoff)	
587	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
2,105	cf	V = Volume[1] (attach a stage-storage table)	**≥ WQV**
1,419	sf	A_{SA} = Surface area of the bottom of the pond	
3.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
6.4	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
514.00	feet	E_{BTM} = Elevation of the bottom of the basin	
510.00	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
508.60	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
4.00	feet	D_{SHWT} = Separation from SHWT	**≥ *[3]**
5.4	feet	D_{ROCK} = Separation from bedrock	**≥ *[3]**
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	**≥ 24"**
	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
Yes	Yes/No	If a trench or underground system is proposed, has observation well been provided?	**←yes**
		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	**← yes**
	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	**← yes**
	:1	If a basin is proposed, pond side slopes.	**≥3:1**
517.39	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
519.01	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
519.75	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	**← yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	**← yes**

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond SC01: Cultec

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
514.00	**1,419**	0
514.10	1,419	57
514.20	1,419	114
514.30	1,419	170
514.40	1,419	227
514.50	1,419	284
514.60	1,419	341
514.70	1,419	397
514.80	1,419	485
514.90	1,419	603
515.00	1,419	721
515.10	1,419	839
515.20	1,419	956
515.30	1,419	1,073
515.40	1,419	1,189
515.50	1,419	1,306
515.60	1,419	1,421
515.70	1,419	1,536
515.80	1,419	1,651
515.90	1,419	1,765
516.00	1,419	1,879
516.10	1,419	1,992
516.20	1,419	2,105
516.30	1,419	2,217
516.40	1,419	2,329
516.50	1,419	2,440
516.60	1,419	2,551
516.70	1,419	2,661
516.80	1,419	2,770
516.90	1,419	2,879
517.00	1,419	2,987
517.10	1,419	3,094
517.20	1,419	3,200
517.30	1,419	3,305
517.40	1,419	3,409
517.50	1,419	3,511
517.60	1,419	3,612
517.70	1,419	3,711
517.80	1,419	3,808
517.90	1,419	3,904
518.00	1,419	3,997
518.10	1,419	4,087
518.20	1,419	4,175
518.30	1,419	4,260
518.40	1,419	4,339
518.50	1,419	4,413
518.60	1,419	4,480
518.70	1,419	4,541
518.80	1,419	4,599
518.90	1,419	4,656
519.00	1,419	4,713
519.10	1,419	4,769
519.20	1,419	4,826
519.30	1,419	4,883
519.40	1,419	4,940
519.50	1,419	4,996
519.60	1,419	5,053
519.70	1,419	**5,110**

Stage-Discharge for Pond SC01: Cultec

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
514.00	0.00	**0.00**	0.00
514.10	0.06	**0.06**	0.00
514.20	0.06	0.06	0.00
514.30	0.06	0.06	0.00
514.40	0.06	0.06	0.00
514.50	0.06	0.06	0.00
514.60	0.06	0.06	0.00
514.70	0.06	0.06	0.00
514.80	0.06	0.06	0.00
514.90	0.06	0.06	0.00
515.00	0.06	0.06	0.00
515.10	0.06	0.06	0.00
515.20	0.06	0.06	0.00
515.30	0.06	0.06	0.00
515.40	0.06	0.06	0.00
515.50	0.06	0.06	0.00
515.60	0.06	0.06	0.00
515.70	0.06	0.06	0.00
515.80	0.06	0.06	0.00
515.90	0.06	0.06	0.00
516.00	0.06	0.06	0.00
516.10	0.06	0.06	0.00
516.20	0.06	0.06	0.00
516.30	0.09	0.06	0.03
516.40	0.17	0.06	0.11
516.50	0.29	0.06	0.23
516.60	0.42	0.06	0.36
516.70	0.53	0.06	0.47
516.80	0.61	0.06	0.56
516.90	0.69	0.06	0.63
517.00	0.76	0.06	0.70
517.10	0.82	0.06	0.76
517.20	0.87	0.06	0.82
517.30	0.93	0.06	0.87
517.40	0.98	0.06	0.92
517.50	1.02	0.06	0.97
517.60	1.07	0.06	1.01
517.70	1.11	0.06	1.06
517.80	1.15	0.06	1.10
517.90	1.19	0.06	1.14
518.00	1.23	0.06	1.18
518.10	1.27	0.06	1.21
518.20	1.31	0.06	1.25
518.30	1.34	0.06	1.29
518.40	1.38	0.06	1.32
518.50	1.41	0.06	1.35
518.60	1.44	0.06	1.39
518.70	1.47	0.06	1.42
518.80	1.63	0.06	1.57
518.90	2.19	0.06	2.13
519.00	2.98	0.06	2.92
519.10	3.99	0.06	3.93
519.20	5.20	0.06	5.14
519.30	6.61	0.06	6.56
519.40	8.25	0.06	8.20
519.50	10.14	0.06	10.08
519.60	12.09	0.06	12.04
519.70	**14.04**	0.06	**13.98**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **SC02 - 43 Mechanic St. Cultec Infiltration**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	**← yes**
0.51	ac	A = Area draining to the practice	
0.30	ac	A_I = Impervious area draining to the practice	
0.58	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.57	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.29	ac-in	WQV= 1" x Rv x A	
1,058	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
265	cf	25% x WQV (check calc for sediment forebay volume)	
Isolation Row		Method of pretreatment? (not required for clean or roof runoff)	
320	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
1,900	cf	V = Volume[1] (attach a stage-storage table)	**≥ WQV**
913	sf	A_{SA} = Surface area of the bottom of the pond	
3.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
4.6	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
531.10	feet	E_{BTM} = Elevation of the bottom of the basin	
528.10	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
524.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
3.00	feet	D_{SHWT} = Separation from SHWT	**≥ *[3]**
7.1	feet	D_{ROCK} = Separation from bedrock	**≥ *[3]**
	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	**≥ 24"**
	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
Yes	Yes/No	If a trench or underground system is proposed, has observation well been provided?	**←yes**
		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	**← yes**
	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	**← yes**
	:1	If a basin is proposed, pond side slopes.	**≥3:1**
534.33	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
535.39	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
536.85	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
#REF!		10 peak elevation ≤ Elevation of the top of the trench?[5]	**← yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	**← yes**

1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

Stage-Area-Storage for Pond SC02: Cultec

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
531.10	**913**	0
531.20	913	37
531.30	913	73
531.40	913	110
531.50	913	146
531.60	913	183
531.70	913	219
531.80	913	256
531.90	913	311
532.00	913	386
532.10	913	461
532.20	913	536
532.30	913	610
532.40	913	685
532.50	913	759
532.60	913	833
532.70	913	906
532.80	913	979
532.90	913	1,052
533.00	913	1,125
533.10	913	1,197
533.20	913	1,269
533.30	913	1,340
533.40	913	1,412
533.50	913	1,483
533.60	913	1,553
533.70	913	1,624
533.80	913	1,694
533.90	913	1,763
534.00	913	1,832
534.10	913	1,901
534.20	913	1,969
534.30	913	2,036
534.40	913	2,103
534.50	913	2,169
534.60	913	2,234
534.70	913	2,298
534.80	913	2,361
534.90	913	2,423
535.00	913	2,484
535.10	913	2,543
535.20	913	2,601
535.30	913	2,657
535.40	913	2,711
535.50	913	2,762
535.60	913	2,809
535.70	913	2,852
535.80	913	2,891
535.90	913	2,928
536.00	913	2,965
536.10	913	3,001
536.20	913	3,038
536.30	913	3,074
536.40	913	3,111
536.50	913	3,147
536.60	913	3,184
536.70	913	3,221
536.80	913	**3,257**

Stage-Discharge for Pond SC02: Cultec

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
531.10	0.00	**0.00**	0.00
531.20	0.04	**0.04**	0.00
531.30	0.04	0.04	0.00
531.40	0.04	0.04	0.00
531.50	0.04	0.04	0.00
531.60	0.04	0.04	0.00
531.70	0.04	0.04	0.00
531.80	0.04	0.04	0.00
531.90	0.04	0.04	0.00
532.00	0.04	0.04	0.00
532.10	0.04	0.04	0.00
532.20	0.04	0.04	0.00
532.30	0.04	0.04	0.00
532.40	0.04	0.04	0.00
532.50	0.04	0.04	0.00
532.60	0.04	0.04	0.00
532.70	0.04	0.04	0.00
532.80	0.04	0.04	0.00
532.90	0.04	0.04	0.00
533.00	0.04	0.04	0.00
533.10	0.04	0.04	0.00
533.20	0.04	0.04	0.00
533.30	0.04	0.04	0.00
533.40	0.04	0.04	0.00
533.50	0.04	0.04	0.00
533.60	0.04	0.04	0.00
533.70	0.04	0.04	0.00
533.80	0.04	0.04	0.00
533.90	0.04	0.04	0.00
534.00	0.04	0.04	0.00
534.10	0.04	0.04	0.00
534.20	0.08	0.04	0.04
534.30	0.18	0.04	0.13
534.40	0.33	0.04	0.28
534.50	0.51	0.04	0.47
534.60	0.72	0.04	0.68
534.70	0.91	0.04	0.87
534.80	1.06	0.04	1.02
534.90	1.19	0.04	1.15
535.00	1.31	0.04	1.27
535.10	1.41	0.04	1.37
535.20	1.51	0.04	1.47
535.30	1.61	0.04	1.56
535.40	1.69	0.04	1.65
535.50	1.78	0.04	1.74
535.60	1.86	0.04	1.82
535.70	1.93	0.04	1.89
535.80	2.01	0.04	1.96
535.90	2.20	0.04	2.16
536.00	2.80	0.04	2.75
536.10	3.63	0.04	3.58
536.20	4.67	0.04	4.63
536.30	5.91	0.04	5.87
536.40	7.36	0.04	7.32
536.50	9.03	0.04	8.99
536.60	10.95	0.04	10.90
536.70	12.93	0.04	12.89
536.80	**14.91**	0.04	**14.86**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **SC03 - Cultec Underground Filter**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
1.81	ac	A = Area draining to the practice	
1.45	ac	A_I = Impervious area draining to the practice	
0.80	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.77	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.40	ac-in	WQV= 1" x Rv x A	
5,066	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
1,267	cf	25% x WQV (check calc for sediment forebay volume)	
3,800	cf	75% x WQV (check calc for surface sand filter volume)	
Isolation row		Method of Pretreatment? (not required for clean or roof runoff)	
1,227	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
523.00	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
1.63	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
1.73	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
518.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
517.50	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
517.50	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
510.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
8.50	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.00	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
525.25	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
525.75	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
5,958	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	C-405	Note what sheet in the plan set contains the filter course specification.	
Yes	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification	
	:1	Pond side slopes	**> 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	**mod. 304.1 (see spec)**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Stage-Area-Storage for Pond SC03: Cultec

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
518.50	2,314	0
518.60	2,314	69
518.70	2,314	139
518.80	2,314	208
518.90	2,314	278
519.00	2,314	347
519.10	2,314	417
519.20	2,314	486
519.30	2,314	555
519.40	2,314	625
519.50	2,314	694
519.60	2,314	764
519.70	2,314	833
519.80	2,314	902
519.90	2,314	972
520.00	**4,628**	1,041
520.10	4,628	1,134
520.20	4,628	1,226
520.30	4,628	1,319
520.40	4,628	1,411
520.50	4,628	1,504
520.60	4,628	1,597
520.70	4,628	1,689
520.80	4,628	1,833
520.90	4,628	2,027
521.00	4,628	2,222
521.10	4,628	2,416
521.20	4,628	2,610
521.30	4,628	2,802
521.40	4,628	2,995
521.50	4,628	3,186
521.60	4,628	3,377
521.70	4,628	3,566
521.80	4,628	3,756
521.90	4,628	3,945
522.00	4,628	4,132
522.10	4,628	4,319
522.20	4,628	4,505
522.30	4,628	4,689
522.40	4,628	4,873
522.50	4,628	5,057
522.60	4,628	5,239
522.70	4,628	5,421
522.80	4,628	5,601
522.90	4,628	5,780
523.00	4,628	5,958
523.10	4,628	6,134
523.20	4,628	6,309
523.30	4,628	6,482
523.40	4,628	6,652
523.50	4,628	6,821
523.60	4,628	6,987
523.70	4,628	7,150
523.80	4,628	7,310
523.90	4,628	7,467
524.00	4,628	7,620
524.10	4,628	7,769
524.20	4,628	7,913
524.30	4,628	8,052
524.40	4,628	8,183
524.50	4,628	8,304
524.60	4,628	8,413
524.70	4,628	8,513
524.80	4,628	8,608
524.90	4,628	8,700
525.00	4,628	8,793
525.10	4,628	8,885
525.20	4,628	8,978
525.30	4,628	9,070
525.40	4,628	9,163
525.50	4,628	9,255
525.60	4,628	9,348
525.70	4,628	**9,440**

Stage-Discharge for Pond SC03: Cultec

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
518.50	0.00	521.10	1.07	523.70	2.04
518.55	0.54	521.15	1.07	523.75	2.06
518.60	0.54	521.20	1.07	523.80	2.09
518.65	0.54	521.25	1.07	523.85	2.11
518.70	0.54	521.30	1.07	523.90	2.13
518.75	0.54	521.35	1.07	523.95	2.15
518.80	0.54	521.40	1.07	524.00	2.17
518.85	0.54	521.45	1.07	524.05	2.19
518.90	0.54	521.50	1.07	524.10	2.21
518.95	0.54	521.55	1.07	524.15	2.23
519.00	0.54	521.60	1.07	524.20	2.25
519.05	0.54	521.65	1.07	524.25	2.27
519.10	0.54	521.70	1.07	524.30	2.29
519.15	0.54	521.75	1.07	524.35	2.30
519.20	0.54	521.80	1.07	524.40	2.32
519.25	0.54	521.85	1.07	524.45	2.34
519.30	0.54	521.90	1.07	524.50	2.36
519.35	0.54	521.95	1.07	524.55	2.37
519.40	0.54	522.00	1.07	524.60	2.39
519.45	0.54	522.05	1.07	524.65	2.41
519.50	0.54	522.10	1.07	524.70	2.42
519.55	0.54	522.15	1.07	524.75	2.44
519.60	0.54	522.20	1.07	524.80	2.58
519.65	0.54	522.25	1.07	524.85	2.83
519.70	0.54	522.30	1.07	524.90	3.14
519.75	0.54	522.35	1.07	524.95	3.51
519.80	0.54	522.40	1.07	525.00	3.94
519.85	0.54	522.45	1.08	525.05	4.42
519.90	0.54	522.50	1.10	525.10	4.94
519.95	0.54	522.55	1.14	525.15	5.52
520.00	1.07	522.60	1.18	525.20	6.16
520.05	1.07	522.65	1.24	525.25	6.84
520.10	1.07	522.70	1.30	525.30	7.57
520.15	1.07	522.75	1.37	525.35	8.35
520.20	1.07	522.80	1.43	525.40	9.21
520.25	1.07	522.85	1.50	525.45	10.13
520.30	1.07	522.90	1.54	525.50	11.10
520.35	1.07	522.95	1.59	525.55	12.13
520.40	1.07	523.00	1.63	525.60	13.06
520.45	1.07	523.05	1.67	525.65	14.01
520.50	1.07	523.10	1.71	525.70	15.00
520.55	1.07	523.15	1.74	525.75	**16.02**
520.60	1.07	523.20	1.77		
520.65	1.07	523.25	1.80		
520.70	1.07	523.30	1.83		
520.75	1.07	523.35	1.86		
520.80	1.07	523.40	1.89		
520.85	1.07	523.45	1.92		
520.90	1.07	523.50	1.94		
520.95	1.07	523.55	1.97		
521.00	1.07	523.60	1.99		
521.05	1.07	523.65	2.02		

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **RG01 - Rain Garden**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.49	ac	A = Area draining to the practice	
0.27	ac	A_I = Impervious area draining to the practice	
0.56	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.55	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.27	ac-in	WQV= 1" x Rv x A	
983	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
246	cf	25% x WQV (check calc for sediment forebay volume)	
737	cf	75% x WQV (check calc for surface sand filter volume)	
Tank forebay		Method of Pretreatment? (not required for clean or roof runoff)	
630	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
Yes	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
517.60	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.16	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
3.41	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
514.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
513.50	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
513.50	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
510.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
4.50	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.00	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
518.32	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
520.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
1,919	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	C-405	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**> 3:1**
Sheet	C-405	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	**mod. 304.1 (see spec)**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Stage-Area-Storage for Pond RG01: Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
514.50	338	0
514.60	338	10
514.70	338	20
514.80	338	30
514.90	338	41
515.00	338	51
515.10	338	61
515.20	338	71
515.30	338	81
515.40	338	91
515.50	338	101
515.60	338	112
515.70	338	122
515.80	338	132
515.90	338	142
516.00	338	152
516.10	361	187
516.20	384	224
516.30	407	264
516.40	430	306
516.50	453	350
516.60	476	396
516.70	499	445
516.80	522	496
516.90	545	550
517.00	569	605
517.10	592	663
517.20	615	724
517.30	638	786
517.40	661	851
517.50	684	918
517.60	707	988
517.70	730	1,060
517.80	753	1,134
517.90	776	1,210
518.00	799	1,289
518.10	822	1,370
518.20	845	1,454
518.30	868	1,539
518.40	891	1,627
518.50	914	1,717
518.60	937	1,810
518.70	960	1,905
518.80	983	2,002
518.90	1,006	2,102
519.00	1,030	2,203
519.10	1,053	2,307
519.20	1,076	2,414
519.30	1,099	2,523
519.40	1,122	2,634
519.50	1,145	2,747
519.60	1,168	2,863
519.70	1,191	2,980
519.80	1,214	3,101
519.90	1,237	3,223
520.00	**1,260**	**3,348**

Stage-Discharge for Pond RG01: Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
514.50	0.00	517.10	0.14	519.70	11.37
514.55	0.08	517.15	0.14	519.75	11.53
514.60	0.08	517.20	0.14	519.80	11.70
514.65	0.08	517.25	0.14	519.85	11.86
514.70	0.08	517.30	0.15	519.90	12.01
514.75	0.08	517.35	0.15	519.95	12.17
514.80	0.08	517.40	0.15	520.00	**12.32**
514.85	0.08	517.45	0.16		
514.90	0.08	517.50	0.16		
514.95	0.08	517.55	0.16		
515.00	0.08	517.60	0.16		
515.05	0.08	517.65	0.17		
515.10	0.08	517.70	0.17		
515.15	0.08	517.75	0.17		
515.20	0.08	517.80	0.17		
515.25	0.08	517.85	0.18		
515.30	0.08	517.90	0.18		
515.35	0.08	517.95	0.18		
515.40	0.08	518.00	0.18		
515.45	0.08	518.05	0.36		
515.50	0.08	518.10	0.68		
515.55	0.08	518.15	1.09		
515.60	0.08	518.20	1.57		
515.65	0.08	518.25	2.12		
515.70	0.08	518.30	2.73		
515.75	0.08	518.35	3.39		
515.80	0.08	518.40	4.10		
515.85	0.08	518.45	4.86		
515.90	0.08	518.50	5.66		
515.95	0.08	518.55	6.50		
516.00	0.08	518.60	6.81		
516.05	0.08	518.65	7.08		
516.10	0.08	518.70	7.34		
516.15	0.09	518.75	7.59		
516.20	0.09	518.80	7.84		
516.25	0.09	518.85	8.08		
516.30	0.09	518.90	8.31		
516.35	0.10	518.95	8.53		
516.40	0.10	519.00	8.75		
516.45	0.10	519.05	8.96		
516.50	0.10	519.10	9.17		
516.55	0.11	519.15	9.37		
516.60	0.11	519.20	9.57		
516.65	0.11	519.25	9.76		
516.70	0.12	519.30	9.96		
516.75	0.12	519.35	10.14		
516.80	0.12	519.40	10.33		
516.85	0.12	519.45	10.51		
516.90	0.13	519.50	10.69		
516.95	0.13	519.55	10.86		
517.00	0.13	519.60	11.03		
517.05	0.13	519.65	11.20		

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **RG02 - Rain Garden**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
0.29	ac	A = Area draining to the practice	
0.12	ac	A_I = Impervious area draining to the practice	
0.43	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.43	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.13	ac-in	WQV= 1" x Rv x A	
455	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
114	cf	25% x WQV (check calc for sediment forebay volume)	
341	cf	75% x WQV (check calc for surface sand filter volume)	
Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
183	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
112	sf	A_{SA} = Surface area of the practice	
3.00	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
Yes	Yes/No	If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided? (Use the calculations below)	
16.3	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
511.75	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.08	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
3.16	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
508.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
507.50	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
506.66	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
505.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.50	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.84	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
512.32	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
514.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
772	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
589	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	C-405	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**> 3:1**
Sheet	C-405	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course spec.	**mod. 304.1 (see spec)**

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Stage-Area-Storage for Pond RG02: Pond

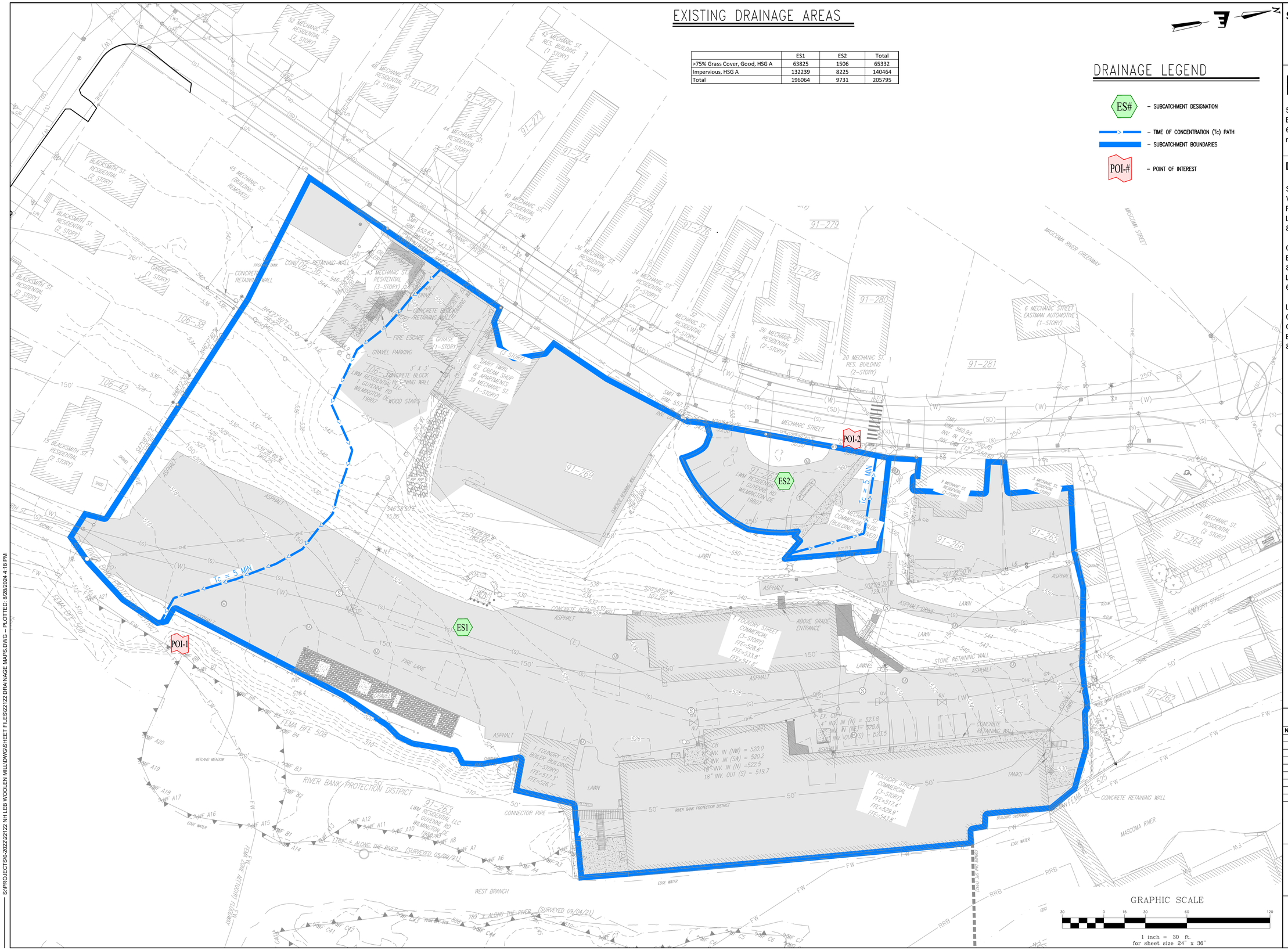
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
508.50	112	0
508.60	112	3
508.70	112	7
508.80	112	10
508.90	112	13
509.00	112	17
509.10	112	20
509.20	112	24
509.30	112	27
509.40	112	30
509.50	112	34
509.60	112	37
509.70	112	40
509.80	112	44
509.90	112	47
510.00	112	50
510.10	126	62
510.20	140	76
510.30	153	90
510.40	167	106
510.50	181	124
510.60	195	142
510.70	208	163
510.80	222	184
510.90	236	207
511.00	250	231
511.10	264	257
511.20	277	284
511.30	291	312
511.40	305	342
511.50	319	373
511.60	332	406
511.70	346	440
511.80	360	475
511.90	374	512
512.00	388	550
512.10	401	589
512.20	415	630
512.30	429	672
512.40	443	716
512.50	456	761
512.60	470	807
512.70	484	855
512.80	498	904
512.90	511	954
513.00	525	1,006
513.10	539	1,059
513.20	553	1,114
513.30	567	1,170
513.40	580	1,227
513.50	594	1,286
513.60	608	1,346
513.70	622	1,408
513.80	635	1,471
513.90	649	1,535
514.00	**663**	**1,600**

Stage-Discharge for Pond RG02: Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
508.50	0.00	511.10	0.06	513.70	10.91
508.55	0.03	511.15	0.06	513.75	11.08
508.60	0.03	511.20	0.06	513.80	11.24
508.65	0.03	511.25	0.07	513.85	11.40
508.70	0.03	511.30	0.07	513.90	11.57
508.75	0.03	511.35	0.07	513.95	11.73
508.80	0.03	511.40	0.07	514.00	**11.88**
508.85	0.03	511.45	0.07		
508.90	0.03	511.50	0.07		
508.95	0.03	511.55	0.08		
509.00	0.03	511.60	0.08		
509.05	0.03	511.65	0.08		
509.10	0.03	511.70	0.08		
509.15	0.03	511.75	0.08		
509.20	0.03	511.80	0.08		
509.25	0.03	511.85	0.08		
509.30	0.03	511.90	0.09		
509.35	0.03	511.95	0.09		
509.40	0.03	512.00	0.09		
509.45	0.03	512.05	0.09		
509.50	0.03	512.10	0.09		
509.55	0.03	512.15	0.27		
509.60	0.03	512.20	0.58		
509.65	0.03	512.25	0.99		
509.70	0.03	512.30	1.48		
509.75	0.03	512.35	2.03		
509.80	0.03	512.40	2.63		
509.85	0.03	512.45	3.29		
509.90	0.03	512.50	4.00		
509.95	0.03	512.55	4.76		
510.00	0.03	512.60	5.56		
510.05	0.03	512.65	6.40		
510.10	0.03	512.70	6.70		
510.15	0.03	512.75	6.97		
510.20	0.03	512.80	7.23		
510.25	0.03	512.85	7.49		
510.30	0.04	512.90	7.73		
510.35	0.04	512.95	7.96		
510.40	0.04	513.00	8.19		
510.45	0.04	513.05	8.42		
510.50	0.04	513.10	8.63		
510.55	0.04	513.15	8.85		
510.60	0.05	513.20	9.05		
510.65	0.05	513.25	9.25		
510.70	0.05	513.30	9.45		
510.75	0.05	513.35	9.65		
510.80	0.05	513.40	9.84		
510.85	0.05	513.45	10.02		
510.90	0.05	513.50	10.21		
510.95	0.06	513.55	10.39		
511.00	0.06	513.60	10.56		
511.05	0.06	513.65	10.74		

EXISTING DRAINAGE AREAS

	ES1	ES2	Total
>75% Grass Cover, Good, HSG A	63825	1506	65332
Impervious, HSG A	132239	8225	140464
Total	196064	9731	205795



SITE PLAN REVIEW

RODE

535 Albany Street | 405
Boston, MA 02118
617.422.0090 | T
rodearchitects.com

Design Team

SURVEY
Vive Libre Geomatics
P.O. Box 1093
Lebanon, NH 03766
802.674.6998 | T

CIVIL
Engineering Ventures, PC
85 Mechanic St Suite E2-3
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603.442.9333 | T

LANDSCAPE
OJB Landscape Architects
One Bowdoin Square, Suite 801
Boston, MA 02114
857.444.8675 | T

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date

DATE: 08.15.22

SCALE: 1"= 30'

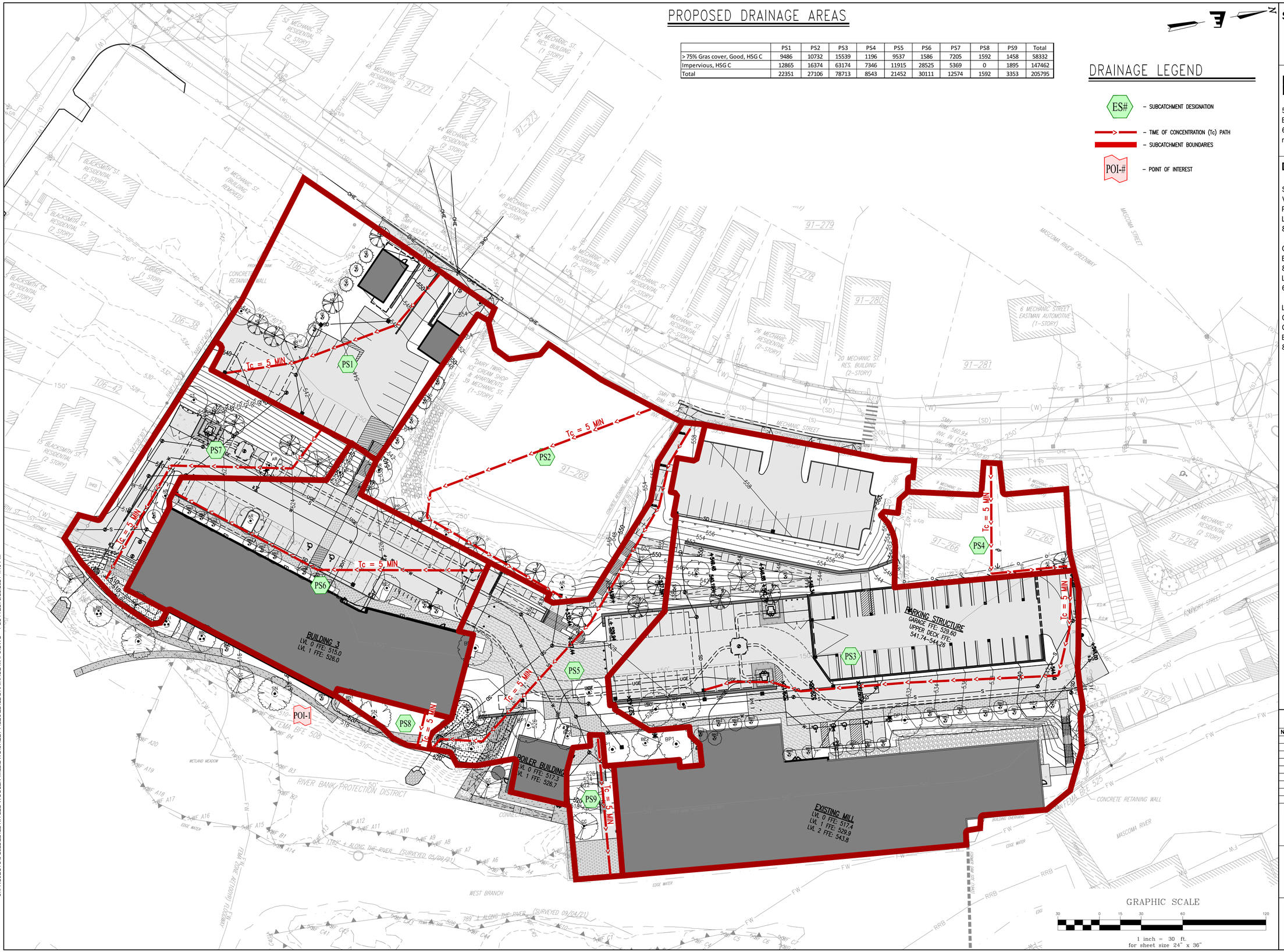
EXISTING DRAINAGE MAP

D1.1

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 DRAINAGE MAPS.DWG – PLOTTED: 8/28/2024 4:18 PM

PROPOSED DRAINAGE AREAS

	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8	PS9	Total
> 75% Gras cover, Good, HSG C	9486	10732	15539	1196	9537	1586	7205	1592	1458	58332
Impervious, HSG C	12865	16374	63174	7346	11915	28525	5369	0	1895	147462
Total	22351	27106	78713	8543	21452	30111	12574	1592	3353	205795



DRAINAGE LEGEND

- ES# – SUBCATCHMENT DESIGNATION
- – TIME OF CONCENTRATION (Tc) PATH
- – SUBCATCHMENT BOUNDARIES
- POI-# – POINT OF INTEREST

SITE PLAN REVIEW

RODE
535 Albany Street | 405
Boston, MA 02118
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857.444.8675 | T

1 FOUNDRY ST.

LEBANON, NH

EV PROJECT: 22122

No.	Description	Date

DATE: 08.15.22

SCALE: 1"= 30'

PROPOSED DRAINAGE MAP

D1.2

S:\PROJECTS\0-2022\22122 NH LEB WOOLEN MILL\DWG\SHEET FILES\22122 DRAINAGE MAPS.DWG – PLOTTED: 8/28/2024 4:19 PM

CITY OF LEBANON
APPLICATION FOR

SPECIAL EXCEPTION	☐	☒	SITE PLAN REVIEW
VARIANCE	☒	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☒	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT):

NAME: City of Lebanon TEL.#:

MAILING ADDRESS: 51 North Park Street, Lebanon, NH

E-MAIL ADDRESS:

CO-APPLICANT, AGENT, OR LESSEE:

NAME: The Muse Lebanon, LLC TEL.#: 978-419-1699

MAILING ADDRESS: PO Box 847 Hollis, NH 03049

E-MAIL ADDRESS: jake.tamposi@gmail.com

PROJECT LOCATION:

TAX MAP #: 92 LOT#: 31 PLOT #: ZONE: LD

STREET ADDRESS OF PROJECT: 20 Spencer Street

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☐ YES ☒ NO **HISTORIC DISTRICT** ☐ YES ☒ NO

FLOOD PLAIN ☒ YES ☐ NO

SCOPE OF PROJECT:

Affordable 80 unit residential multi-family development.

TYPE OF OCCUPANCY:

EXISTING ☒ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☒ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL
IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC** USE: Affordable Housing

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on September 9, 2024, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER: Jacob F Tamposi DATE: 8/12/24

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER: _____ DATE: _____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - $ AMOUNT	DATE PAID	VOUCHER #

(Last Revised 4/04/18)

TFM
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

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.

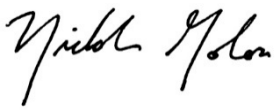
To create a rich, vibrant affordable housing community, we have consciously designed the Muse Apartments to connect with broader context of downtown Lebanon. Taking inspiration from Lebanon's Master Plan and Downtown Visioning Study, the Muse Apartments establishes an inviting and lively presence on 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.

Sincerely,
TFMoran, Inc.



Nicholas Golon, P.E.
Civil Department Manager, Principal

CITY OF LEBANON, NH SITE PLAN REVIEW REGULATIONS TECHNICAL CHECKLIST	
PROJECT NAME: The Muse Apartments	
APPLICANT: The Muse Lebanon, LLC	**DATE:** 8/12/24
GENERAL SUBMISSION REQUIREMENTS:	

All applications to the Planning Board for Site Plan Review must be submitted by <u>12:00 Noon</u> on the day of the filing cutoff. [§4.7.B] **Submissions must be accompanied by the following information or review of the application may be delayed:**

A properly completed and signed Application Form *(available at www.lebanonnh.gov)*. [§5.1.A]

The appropriate filing fees. [§5.1.B]

A written project description. [§5.1.C]

A list of the names and mailing addresses of all persons to be notified, by certified mail, of the public hearing. [§5.1.D]

A completed and signed Application for Waivers *(available at www.lebanonnh.gov)* [§5.1.G.3]

A completed and signed Technical Checklist *(available at www.lebanonnh.gov)*. [§4.7.B] *[Applicants must complete the entire checklist to ensure that all necessary information and materials have been provided with the application or that written requests for waivers have been properly provided in accordance with Article VII of the Site Plan Review Regulations, as appropriate.]*

Two (2) full-size sets of the Site Plan set. [§5.1.E]

A digital copy of the Site Plan set in .PDF format. [§5.1.F]

<u>NOTE</u>: Applications shall contain sufficient information to enable the City Staff and the Planning Board to evaluate the proposed development for compliance with the Zoning Ordinance, the Planning Board's Regulations, and other applicable City Codes, and for the Planning Board to make an informed decision.

All required application materials shall be submitted as a single inclusive package, including any appropriate waiver requests as permitted by the Regulations. Submission of a complete application package ensures that the review process by City Staff is as efficient and effective as possible.

The purpose of the filing deadline is to provide adequate time for City review of the proposal. Submission of any altered, additional, or substitute application materials required by Article V of these Regulations, subsequent to the filing deadline, other than as directed by City Staff, shall cause the application to be deemed untimely filed, and such application shall not be heard until a subsequent month.

PLAN SUBMITTAL TECHNICAL CHECKLIST:

NOTE: Site plan drawings shall include the information described below pursuant to Article V of the Lebanon Site Plan Review Regulations. Plans shall be submitted on sheets no larger than 24" x 36". Plan sets with multiple sheets shall include sheets of uniform size and be bound on the left edge. When more than three (3) sheets are required, an additional cover sheet shall be attached including a table of contents. A scale of not smaller than one (1) inch equals 40 feet is suggested. All lettering shall be of a size and type that is legible.

In order to facilitate the use of the City's Geographic Information System (GIS) for planning purposes, all surveys and engineered plans submitted for Site Plan Review shall utilize the NH State Plane Coordinate system and shall reference the North American Vertical Datum of 1988 (NAVD 88), unless prior approval to use an alternate coordinate system and/or vertical datum is granted by the Planning & Development Department.

A written request for waiver shall be required, pursuant to Article VII of the Site Plan Review Regulations, for any submission requirement for which the information or data is not provided by the applicant. [§5.1.G(4)] NOTE: The submission requirements described in paragraphs 5.1.E(1) through 5.1.E(4) shall not be waivable under the procedures of Article VII of the Site Plan Review Regulations. [§5.1.E]

[Checklist begins on following page]

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements	Info. Provided	Waiver Sought
5.1.E(1) - Vicinity sketch showing the location of the site in relation to the surrounding public street system (suggested scale: 1" = 500').	☒	N/A
5.1.E(2) - Names and mailing addresses of the Applicant; the Owner(s) of record of the site; the Owners of abutting properties; and the Holders of any easements, rights of way, or other restrictions, based on the current records of the City Assessor available at City Hall, not more than 5 days before the date of filing of the application.	☒	N/A
5.1.E(3) - Names and business addresses of the preparer(s) of the plan and every surveyor, engineer, architect, soil scientist, or wetlands scientist whose professional seal appears on any plan or document submitted to the Board.	☒	N/A
5.1.E(4) - The following information shall be provided on the first page (or cover page, if applicable) of the Site Plan:		
a. Name of the City and County in which the development is proposed;	☒	N/A
b. North arrow;	☒	N/A
c. Scale of the plan;	☒	N/A
d. Date of the plan and of any revisions to the plan; (NOTE: The date on the plan at the time of initial submission for application review shall be included on all subsequent submissions to the City. Any subsequent change(s) to the plan shall include a revision date and description of the revision(s).)	☒	N/A
e. The following basic site information in TABLE FORM:		
1. Zoning designation for subject property;	☒	N/A
2. Tax Map and Lot number(s) for subject property;	☒	N/A
3. Area of lot;	☒	N/A
4. Gross floor area of existing and proposed buildings/additions;	☒	N/A
5. Number of existing and proposed on- and off-street parking spaces as a table. The table must identify (i) the number of required (minimum) parking spaces and the permitted (maximum) number of parking spaces and the calculations for each, (ii) future proposed, and (iii) existing parking capacity. If the site is part of an existing development or subdivision, the master table must provide such information for all related sites and phases, individually and as a project total;	☒	N/A
6. Number of existing and proposed short- and long-term bicycle storage spaces;	☒	N/A
7. Number of existing and proposed loading spaces;	☒	N/A
8. Height of existing and proposed buildings/additions;	☒	N/A
9. Number of stories and gross square footage of each;	☒	N/A
10. Proposed use;	☒	N/A
11. Required and proposed front, side, and rear yard setbacks	☒	N/A
12. Maximum allowable lot coverage with existing and proposed calculations;	☒	N/A
13. Indication of whether or not the property is subject to any City Overlay districts (for example, the Wetlands Conservation District or Flood Plain District) or to NHDES Shoreland Water Quality Protection jurisdiction.	☒	N/A
5.1.E(5) - Current survey certified by a land surveyor licensed in New Hampshire, depicting the perimeter boundaries of the lot(s) of the proposed site, including compass bearings, distances, and lot areas, and depicting the location of any existing improvements on the property and the width and location of any rights-of-way and/or easements on the property.	☒	☐

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**	
5.1.E(6) - Existing and proposed grades, including topographic contours, with spot elevations. Where the grade is less than 20%, the contours shall be at 2-foot intervals; otherwise they shall be at 5-foot intervals. All contours shall be referenced to USGS or FEMA Flood Insurance Rate Map (FIRM) datums, as appropriate. Existing topographic information shall be prepared by a professional engineer registered in New Hampshire or land surveyor licensed in New Hampshire.	☒	❒	
5.1.E(7) - Shape, size, height, and location of all existing structures located on site and within 200 feet of site.	☒	❒	
5.1.E(7) - Elevation views indicating shape, size, height, and location of all proposed structures, including expansions of or additions to existing buildings. Such elevation views shall provide sufficient detail to allow for review by the Board and City staff of the adequacy of proposed access and egress points, walkways, lighting, and other site-related improvements.	☒	❒	
5.1.E(8) - Location of existing natural features such as streams, marshes, lakes, ponds, wetlands, rock outcrops, or wooded areas, and existing man-made features such as roads and structures. Indicate those natural and man-made features that are to be removed, retained, or altered.	☒	❒	
5.1.E(8) - Wetlands on the property shall be delineated by a NH Certified Wetlands Scientist, whose seal and signature shall appear on the plan. Documentation in the form of U.S. Army Corps of Engineers New England District Wetlands Delineation Data Sheets and/or other field notes and materials concerning the delineation shall be submitted.	❒	❒	NA-no wetlands
5.1.E(9) - Zoning District, Tax Map and Lot number, and use of abutting properties within 200 feet of property.	☒	❒	
5.1.E(9) - Location of streets, pedestrian paths/trails, and bicycle routes within 200 feet of the site boundary; and the location of curb cuts and vehicle accesses within 200 feet of the site boundary.	☒	❒	
5.1.E(10) - Proposed streets, driveways, emergency vehicle accesses, parking spaces, and sidewalks, with indication of dimensions and direction of travel. Show required sight distances at curb cuts and dimensions for the inside radii of all curves.	☒	❒	
5.1.E(10) - Vehicle and bicycle parking spaces shall be numbered.	☒	❒	
5.1.E(10) - Loading spaces and facilities used in connection with any structures on the site shall be shown	❒	❒	NA -not required
5.1.E(10) - Total square footage and percentage of the lot covered by impervious cover shall be shown.	☒	❒	
5.1.E(11) - Parking area safety measures including raised crosswalks/speed tables, signage, walkway lighting, striping and similar markings such as dedicated pedestrian/bicycle crossings and lanes through parking areas, fire lanes, compact and/or electric vehicle parking/charging, parking wayfinding, ADA signage and access aisles.	☒	❒	
5.1.E(12) - Size and location of all existing and proposed public and private utilities. *(Note: the applicant is encouraged to submit a Sewer Use Permit Application and obtain a Notice of Permitted Allocation, and to obtain a Water Use Permit prior to submission of the Site Plan Review application.)*	☒	❒	

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(13) - Plan for outdoor lighting showing proposed location, mounting height, fixture type, lamp type, color correlated temperature (CCT), and wattage of all exterior free-standing lighting or building-mounted fixtures.	☒	❒
5.1.E(13) - Analyses and illuminance-level diagrams, to include average and minimum foot-candle measurements, showing that proposed installation conforms to the lighting-level standards in Site Plan Review Regulations.	☒	❒
5.1.E(13) - Manufacturer's specification information for each proposed light fixture and lamp (NOTE: This information may be provided on the plan or as a separate attachment).	☒	❒
5.1.E(13) - Drawings of all relevant building elevations showing location and height of all building-mounted fixtures, the portions of any walls or architectural features to be illuminated, illumination levels of walls or architectural features, and aiming points for any remote light fixtures.	☒	❒
5.1.E(14) - Plan for location of free-standing or building-mounted signs, including location, mounting, aiming, and shielding of any remote light fixtures for externally-lit signs.	☒	❒
5.1.E(14) - For internally-lit signs, relevant information concerning the method of illumination and the opacity of the sign background, showing that the proposed installation conforms to the requirements of the Regulations.	❒	❒ NA
5.1.E(15) - The location and boundaries of any Overlay Districts established pursuant to Article IV of the Zoning Ordinance (including but not limited to the Wetlands Conservation District, Riverbank Protection District, Steep Slopes District, and Floodplain District) and, if applicable, protected shorelands pursuant to the Shoreland Water Quality Protection Act (NH RSA 483-B).	☒	❒
5.1.E(15) - For properties located within the Floodplain District, the 100-year flood elevation, floodway, shoreland protection zone, and flood plain limits shall be identified.	☒	❒
5.1.E(16) - Landscaping plan showing proposed new plantings to be installed and existing natural vegetation to be retained. Plan shall show in detail the number, size (height and/or caliper), and species (botanical and common names) of all proposed shrubs and trees.	☒	❒
5.1.E(16) - Existing trees over 12 inches in diameter (measured 4.5 feet above ground surface) within 25 feet of the disturbed area, must be counted and shown on the plan, if included towards fulfilling landscaping requirements.	☒	❒
5.1.E(16) - Calculations for square footage of perimeter landscaping.	☒	❒
5.1.E(16) - Parking lot shading calculations shall be provided by depicting new trees and shrubs at 10-year crown size.	☒	❒
5.1.E(17) - Existing and proposed surface and subsurface storm drainage facilities, including City storm drainage facilities located within 200' of site.	☒	❒
5.1.E(17) - Plans for retention, detention, slow release, and treatment of storm water shall be provided shall be provided in accordance with the requirements of Section 6.6.	☒	❒
5.1.E(18) – Section 6.6. Stormwater Management submission requirements.	See Stormwater Checklist	
5.1.E(19) - Plans for snow removal and storage.	☒	❒

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(20) - A plan for the development showing provisions for automobile, transit, bicyclist, and pedestrian access and circulation. Such plan shall show both existing and proposed means of access to the site including connections with, public streets, sidewalks, transit stops, and formal paths/trails. Plans shall include any traffic calming and traffic control devices necessary in conjunction with the site development, as well as the location of all existing transit routes and transit stops located or passing within 1/4 mile (1,320 feet) of the property.	☒	❒
5.1.E(21) - Construction detail drawings including, but not limited to, pavements, walks, steps, curbing, drainage structures, water and/or sewer utilities, ground-mounted signage (e,g,, fire lanes, ADA parking, commercial), surface treatments, transit shelters, energy generation units (e.g., solar), bike rack style, electric vehicle charging, outdoor lighting, outdoor furniture, retaining walls, tree boxes and other site systems or structures. Accompanying specifications and cutsheets may be required.	☒	❒
5.1.E(21) - Where applicable, roadway, drainage, water and sewer utility profile drawings shall be provided at a scale of 1"=40 feet (horizontal) and 1"=4 feet (vertical) and typical cross-section drawings shall be provided at a scale of 1"=5 feet (horizontal and vertical), unless prior approval to use an alternate scale is granted by the Reviewing Engineer. (NOTE: Ordinarily, only two (2) sets of such construction drawings shall be provided to the Planning and Development Department with the application submission.)	☒	❒
5.1.E(22) - Depict any current and proposed easements, rights-of-way, and deed restrictions including those related to sewer, electrical utility, shared access, etc.	☒	❒
5.1.E(23) - For multi-family structures, plans for on-site recreational facilities.	☒	❒
5.1.E(24) - Where a fire, emergency equipment, or similar vehicle turnaround area is provided, it must have an adequate turn radius. Provide CAD Autoturn data or a similar basis of design for the turn radius, if requested by Lebanon Fire or Engineering staff. City staff may also ask for this information at any time.	☒	❒
Supporting Documents and Information, Where Applicable	**Info. Provided**	**Not Applicable**
5.1.G(1) - An estimated timetable, to include phasing schedules, for construction and completion of buildings, parking, facilities, landscaping, and other required improvements.	☒	❒
5.1.G(2) - Any development estimated to generate a net increase of 100 peak hour trips or 1,000 average daily trips (based upon the most current edition of the ITE Trip Generation Manual) shall prepare and submit a Traffic Impact Study in accordance with standard traffic analysis conventions as set forth by the NHDOT. The Board may, at its discretion, require the submission of a Traffic Impact Study for developments estimated to generate less than 100 peak hour trips or 1,000 average daily trips if the Board has reason to believe such development could adversely affect levels of service or have other adverse impacts.	☒	❒ waiver
5.1.G(3) – Written requests for waivers from all applicable provisions of these Regulations shall be provided pursuant to Article VII – "Waiver Procedure". *(note: use Application for Waivers form).*	☒	❒
5.1.G(4) – For multi-family dwelling developments and mixed-use developments resulting in a net increase of 50 dwelling units or more, the application shall include the information and impact statements identified in Section 6.9.B.	☒	❒

NOTE: THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE REQUIRED INFORMATION PURSUANT TO ARTICLE V OF THE SITE PLAN REVIEW REGULATIONS. PLEASE BE AWARE THAT THIS CHECKLIST IS FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT REPRESENT THE LAW DICTATING SUBMITTAL REQUIREMENTS NOR IS IT COMPLETE AND INCLUSIVE THEREOF.

Completed By: Nicholas Golon

CITY OF LEBANON, NH STORMWATER REVIEW REGULATIONS TECHNICAL CHECKLIST	
PROJECT NAME: The Muse Apartments	
APPLICANT: The Muse Lebanon, LLC	**DATE:** 8/12/2024

NOTE: Stormwater plans shall include the information described below pursuant to Article VI of the Lebanon Site Plan Review Regulations. Plans shall be submitted on sheets no larger than 24" x 36". Plan sets with multiple sheets shall include sheets of uniform size and be bound on the left edge. When more than three (3) sheets are required, an additional cover sheet shall be attached including a table of contents. A scale of not smaller than one (1) inch equals 40 feet is suggested. All lettering shall be of a size and type that is legible.

In order to facilitate the use of the City's Geographic Information System (GIS) for planning purposes, all surveys and engineered plans submitted shall utilize the NH State Plane Coordinate system and shall reference the North American Vertical Datum of 1988 (NAVD 88), unless prior approval to use an alternate coordinate system and/or vertical datum is granted by the Planning Office.

A written request for waiver shall be required, pursuant to Article VII of the Site Plan Review Regulations, for any submission requirement for which the information or data is not provided by the applicant. [§6.6.I]

[Stormwater checklist begins on following page]

Plan Requirements	Info. Provided	Waiver Sought	
6.6.C.1 (1) - An Existing Conditions S.M.P showing all pre-development:			
a. Surface water bodies and wetlands	☒	☐	
b. Drainage patterns	☒	☐	
c. Flood plains and floodways (with elevations)	☒	☐	
d. Watershed boundaries	☒	☐	
e. Buffer zones	☒	☐	
f. Topographic contours with minimum 2-foot intervals	☒	☐	
g. Buildings / structures	☒	☐	
h. Pavement	☒	☐	
i. Utilities	☒	☐	
j. Soils information with coding as HSG-A, B, C, or D (High Intensity Soil Survey (HISS) mapping may be required per request of the City Engineer).	☒	☐	NRCS soils
1. The plan shall also include the following elements:			
a. scale bar	☒	☐	
b. north arrow	☒	☐	
c. title block with project name	☒	☐	
d. applicant's name	☒	☐	
e. map and parcel number	☒	☐	
f. designer's stamp	☒	☐	
g. soil and/or wetland scientist's stamp (if applicable)	☒	☐	
h. legend	☒	☐	
i. locus plan	☒	☐	
j. benchmarks	☒	☐	
k. notes with datum and other plan references	☒	☐	
l. instructions	☒	☐	
m. detail descriptions	☒	☐	
6.6.C.1 (2) - A Proposed Conditions SMP showing all proposed post-development temporary and permanent stormwater management system elements, erosion and sediment control Best Management Practices (BMP), and all important hydrologic features. The Proposed Conditions S.M.P must be at the same scale as the Existing Conditions SMP, with consistent title block, plan features, and descriptors including but not limited to the following:			
a. Existing and proposed topographic contours (2-foot minimum contour interval; 1-foot contour intervals may be required for sites with limited relief and/or where proposed stormwater outfalls are located adjacent to buffer zones.	☒	☐	
b. Proposed areas of disturbance with total area of disturbance clearly labeled in square feet	☒	☐	
c. Existing and proposed buildings and structures	☒	☐	
d. Stormwater discharge locations labeled and matched to the drainage analyses	☒	☐	
e. Wells and sanitary protective radii, if applicable	☒	☐	
f. Septic systems, if applicable	☒	☐	

Plan Requirements (*cont.*)	**Info. Provided**	**Waiver Sought**	
g. Plan references and notes (including sequence of soil disturbance)	☒	☐	
h. Proposed and existing public and private utilities	☒	☐	
i. Proposed project components to become property of or the responsibility of the City shall be labeled as such	☐	☐	NA
j. Existing and proposed impervious cover, with areas used to calculate effective impervious cover (EIC, as defined herein) clearly identified and the square footage of each type identified and labeled.	☒	☐	
k. Test Pit(s) locations and data where stormwater practices are proposed, as appropriate.	☐	☒	
l. Details of individual design elements shown on separate plan sheets following the Proposed Conditions SMP. The Existing Conditions SMP & the Proposed Conditions SMP shall be provided on sheets no larger than 24" x 36", at a scale of one (1) inch = 20 feet for urban areas, and one (1) inch = 40 feet for non-urban areas. The City Engineer will make the final determination as to the appropriate scale, ensuring that all important site and hydrologic features are easily recognized. If plan shall encompass more than two (2) sheets, at the required 1:40 or 1:20 scale, a separate large scale representation plan sheet (e.g. 1:100) is required to be provided, so as to show entirety of site, as well as off-site contributing areas.	☒	☐	
6.6.C.2 - In addition to the above described SMP plan sheets, the following SMP supplemental information is required: 1. A drainage analysis that includes calculations comparing pre- and post-development stormwater runoff rates (cubic feet per minute) and volumes (cubic feet) based on a 1-inch rainstorm, and the 2-year, 25-year, 50-year, and 100-year, 24-hour frequency storms. Calculations shall include, but not be limited to, the sizing of all structures and BMPs, including sizing of emergency overflow structures based on the 50-year 24-hour frequency storm discharge rate, with 1-foot of free-board. Storm rates shall be based on current design depths from the Northeast Regional Climate Center - http://precip.eas.cornell.edu. *Any site that was primarily wooded in the last five years shall be considered undisturbed woods Any site from which wooded vegetation has been removed within 5 years prior to the first submission to the planning board with respect to a proposed development, or upon which, at some earlier time, clearing has occurred in anticipation of development, shall be treated as undisturbed woodland for purposes of calculating pre-development runoff volumes. For purposes of this paragraph any tree cutting which occurred without leaving stands of healthy, growing trees within areas near waters and highways, as required by RSA 227-J:9, I, shall be presumed to have occurred in anticipation of development*	☒	☐	

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST & STORMWATER CHECKLIST

Plan Requirements (*cont.*)	**Info. Provided**	**Waiver Sought**
2. A drainage analysis results summary tabulated (pre & post) for each proposed outfall or catchment outlet point including runoff rates and volumes for each storm event analyzed above.	☒	❒
3. An Erosion and Sediment Control Plan for all proposed construction activities in accordance with the NH Stormwater Management Manual Volume 3, (December 2008 or current revision; downloadable from the website)	☒	❒
4. A comprehensive Operation and Maintenance Plan for long-term maintenance of all proposed stormwater management elements and BMPs including the proposed schedule of inspections and anticipated maintenance (see section H.2 Operations & Maintenance Plan for detailed requirements).	☒	❒
6.6.D - Phased Development: For phased developments, the plans and calculation requirements under this section (6.6) shall apply as though the development of the entire parcel were being proposed in one single application. The review and approval process for phased development applications is provided in section 4.9 of the Lebanon Site Plan Regulations.	❒	❒

NA

NOTE: THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE REQUIRED INFORMATION PURSUANT TO ARTICLE VI OF THE SITE PLAN REVIEW REGULATIONS. PLEASE BE AWARE THAT THIS CHECKLIST IS FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT REPRESENT THE LAW DICTATING SUBMITTAL REQUIREMENTS NOR IS IT COMPLETE AND INCLUSIVE THEREOF.

Completed By: Nicholas Golon

(Last Revised 9/20/2021)

Planning office Use Only:

Date Received___/___/___ Checklist Complete YES or NO Checked by:_____

City of Lebanon, New Hampshire
APPLICATION FOR WAIVERS

Office Use Only	Date Received: _____	File No.: _____

PROJECT INFORMATION

Name of Applicant: City of Lebanon & The Muse Lebanon, LLC

Project Name: The Muse Appartments

Project Address: 20 Spencer Street, Lebanon, NH 03766

WAIVER REGULATIONS

In order to grant a Waiver from a requirement of the City of Lebanon Site Plan Review or Subdivision Regulations, the Planning Board must find that the Waiver is justified under one of the following criteria *(See Article VII of the Site Plan Review Regulations and Section 7.15 of the Subdivision Regulations)*:

Criteria A. Strict conformity would pose an unnecessary hardship to the Applicant and waiver would not be contrary to the spirit and intent of the regulations;

OR

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.

WAIVER REQUEST(S)

I (we) hereby request a Waiver from:
[You can respond in the space provided, or attach a separate statement. Please be prepared to address each request during your public hearing. You must show that you have justified granting the Waiver(s).]

1. Section 5.1.G.2 of the (*circle one*) **Site Plan Review / Subdivision Regulations.** A Waiver of this Section meets (*circle one*) **Criteria A / Criteria B** because
   Please see attached
   _____
   _____

2. Section 6.2.B.1.A of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
   Please see attached
   _____
   _____

3. Section 6.2.B.4 of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
Please see attached

_____

_____

4. Section 6.2.B.6 of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
Please see attached

_____

_____

5. Section 6.2.D.1 of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
Please see attached

_____

_____

6. Section 6.6.C.1.2.K of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
Please see attached

_____

_____

7. Section 6.6.G of the (circle one) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (circle one) Criteria A / Criteria B because
Please see attached

_____

_____

8. Section ___ of the (*circle one*) **Site Plan Review / Subdivision Regulations**. A Waiver of this Section meets (*circle one*) **Criteria A / Criteria B** because _____

_____

_____

_____

SIGNATURE

I (we) hereby submit this application to the Planning Board and attest that to the best of my (our) knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As the applicant or as the agent of the applicant, I attest that I am duly authorized to act in this capacity.

Signature of Applicant: _____ Date: _____

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

August 12, 2024, *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request – Lebanon Site Plan Regulations Section 5.1.G.2 - Traffic Impact Study
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a waiver from Section 5.1.G.2 of the Lebanon Site Plan Regulations to permit a Trip Generation Memorandum where a Traffic Impact Study is required.

Although the general City threshold for traffic studies is 100 trips per hour and 1,000 trips daily, in this case the Saturday peak hour is 2 trips over the threshold of 100 trips per hour, and all other volumes fall below the applicable threshold(s). Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 the traffic peak trips and total volumes are below 100 and 1,000 respectively and do not constitute a waiver request.

(2) On weekends, there are 960 daily trips, this daily volume falls below the threshold and does not constitute a waiver request.

(3) On weekends, there are 102 peak hour trips. The Saturday peak hourly volume is 2 trips over the threshold (of 100 peak hour trips), this is the data point that triggers the waiver request.

(4) The generator (this use and the number and apartments) produces its peak hour trips between 3:00PM and 5:00 PM on the weekend. NHDOT MS2 data logs show that Bank Street, which must be traveled on by vehicles entering or exiting the site, peaks between 9:00AM and 10:00AM on Saturday. The generators peak hour trips fall outside of the roadway network's peak hour trips on Saturday (see attachments).

(5) Bank Street's peak hour trips between 9:00AM and 10:00AM on Saturday is 618. The peak hour trips between 3:00PM and 5:00PM is 427 and 378 respectively. This is a difference of 191 trips from the road's peak hour and the generators peak hour, meaning this site contribution would still be less than the road's peak hour.

(6) 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

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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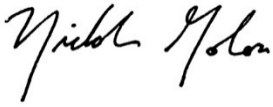
of the Saturday case would be unlikely to provide any relevant information, and the weekday volumes fall well below the traffic thresholds.

(7) 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.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 5.1.G.2.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.



Nicholas Golon, PE
Civil Department Manager/Principal

Attachment 1: Generator Weekend Peak

Land Use Code	223		
Land Use	Affordable Housing		
Subcategory	Income Limits		
Setting	General Urban/Suburban		
Time Period	Saturday		
# Data Sites	1		
	% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting
--	--	--	--
--	--	--	--
12:00 - 5:00 AM	3.2%	3.0%	3.4%
--	--	--	--
--	--	--	--
5:00 - 6:00 AM	2.1%	0.5%	3.9%
6:00 - 7:00 AM	2.9%	1.0%	5.0%
7:00 - 8:00 AM	2.6%	1.0%	4.5%
8:00 - 9:00 AM	2.9%	2.5%	3.4%
9:00 - 10:00 AM	2.6%	2.5%	2.8%
10:00 - 11:00 AM	4.2%	4.9%	3.4%
11:00 - 12:00 PM	3.7%	1.5%	6.2%
12:00 - 1:00 PM	5.0%	4.4%	5.6%
1:00 - 2:00 PM	6.3%	5.9%	6.7%
2:00 - 3:00 PM	7.1%	10.4%	3.4%
3:00 - 4:00 PM	9.5%	10.4%	8.4%
4:00 - 5:00 PM	9.5%	9.4%	9.5%
5:00 - 6:00 PM	5.3%	5.4%	5.0%
6:00 - 7:00 PM	8.1%	6.9%	9.5%
7:00 - 8:00 PM	5.8%	6.9%	4.5%
8:00 - 9:00 PM	8.1%	9.9%	6.2%
9:00 - 10:00 PM	3.7%	6.4%	0.6%
10:00 - 11:00 PM	3.7%	3.5%	3.9%
11:00 - 12:00 AM	4.7%	4.0%	5.6%

Attachment 2: NHDOT MS2 Data for Bank Street

Volume Count Report

LOCATION INFO	
Location ID	A2253067
Type	SPOT
Fnct'l Class	4
Located On	Bank St
Loc On Alias	US 4 (BANK ST) WEST OF ELM ST
Direction	2-WAY
County	GRAFTON
Community	LEBANON
MPO ID	
RPMS ID	
Agency	New Hampshire DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Sat 9/10/2022
End Date	Sun 9/11/2022
Start Time	12:00:00 AM
End Time	12:00:00 AM
Direction	
Notes	nhdot
Station	022530070000
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	

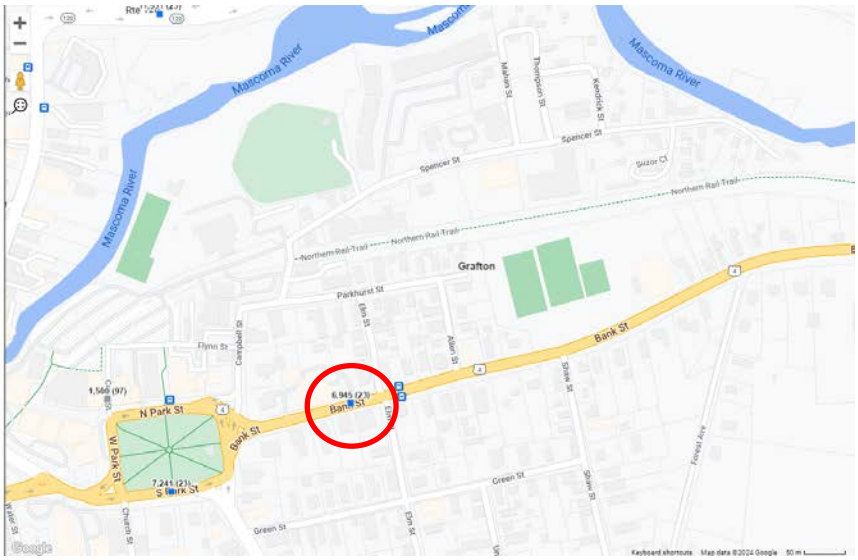
INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	5	4	1	3	13
1:00-2:00	5	4	8	3	20
2:00-3:00	2	2	0	2	6
3:00-4:00	1	5	6	0	12
4:00-5:00	4	7	12	14	37
5:00-6:00	19	24	34	42	119
6:00-7:00	30	30	46	72	178
7:00-8:00	78	78	108	120	384
8:00-9:00	126	117	116	160	521
9:00-10:00	174	122	168	154	618
10:00-11:00	140	156	116	138	550
11:00-12:00	136	160	124	84	500
12:00-13:00	151	132	114	114	511
13:00-14:00	86	124	136	110	456
14:00-15:00	112	92	99	102	405
15:00-16:00	98	121	118	100	437
16:00-17:00	104	96	108	70	378
17:00-18:00	82	74	72	50	278
18:00-19:00	75	82	68	42	267
19:00-20:00	48	40	32	38	158
20:00-21:00	35	20	18	12	85
21:00-22:00	28	14	18	16	76
22:00-23:00	26	4	8	3	41
23:00-24:00	7	8	6	10	31
Total					6,059
AADT					6,205
AM Peak					08:45-09:45 624
PM Peak					12:00-13:00 511

Count Navigation: << < > >> Count Type: VOLUME

Directions: 2-WAY

View Calendar | View in Excel | Bar Graph | Line Graph | Weekly Report | Hourly Volume By Lane | Compare Count



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

August 12, 2024, *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request – Lebanon Site Plan Regulations Section 6.2.B.1.a - Perimeter Landscaping
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a partial dimensional waiver from Section 6.2.B.1.a of the Lebanon Site Plan Regulations waive the required front yard landscaping depth and the sideyard depth along only the western property line.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.2.B.1.a meets Criteria B because:

(1) Relative to the subject property, the area corresponding to the front yard perimeter landscaping area primarily consists of the Spencer Street travel-way, paved municipal parking on Spencer Street, and a municipal sidewalk. Removal of the travel-way, parking spaces and sidewalk to accommodate the minimum landscape depth requirement would not be in the best interests of the City and the Developer as they serve a valid public purpose. Alternatively, the building cannot be pushed deeper into the lot to provide additional front landscape area, as the design and siting of the building, associated parking, and emergency access behind the building would be compromised. Although the full depth requirement is not met, the project is providing the required number of plantings in the front yard perimeter landscaping area. The limitation to provide a lesser depth then required for the perimeter landscaping area as described still meets the purpose of the standard to promote safety, compatibility, and efficiency, and enhance the overall visual attractiveness of the building, the site and the City.

(2) Along the westerly property line, the project is providing a paved path to promote interconnection to the Rail Trail. The edge of this paved path is seven and a half (7.5) feet from the property line. This path is a benefit to the project and the public as it provides recreation access and pedestrian connectivity that would otherwise be lacking. The path abuts the Fire Department approved fire truck turnaround, and relocation to achieve the 10' perimeter landscape area cannot be accommodated without creating a conflict with the travel path of the fire apparatus. Although the full depth requirement is not met, the project is providing the required number of plantings in the specified perimeter landscaping area. The limitation to provide a lesser depth then required for the perimeter landscaping area as described still meets the purpose of the standard to promote safety, compatibility, and efficiency, and enhance the overall visual attractiveness of the building, the site and the City.

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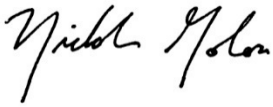
We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.2.B.1.a.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,

TFMoran, Inc.



Nicholas Golon, PE
Civil Department Manager/Principal

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

August 12, 2024, *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request–Lebanon Site Plan Regulations Section 6.2.B.4–Perimeter Landscape Trees
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a waiver from Section 6.2.B.4 of the Lebanon Site Plan Regulations to permit trees to be one located (1) foot from the rear property line where 8 (eight) feet is required.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.2.B.4 meets Criteria B because:

(1) Due to the existing geometry of the lot and the necessary accommodations for the proposed development - consisting of the building, parking and access (parking located in the rear of the property), the available area to dedicate to the parking perimeter landscaping areas is limited. In order to site the required perimeter tree plantings such that mature canopy growth will not inhibit emergency access, parking or site lighting, planting have been located in closer proximity to the rear property line than as dictated by the regulations. This location abuts the City owned Northern Rail Trail, and the proposed trees will act to supplement the existing tree cover.

(2) The rail trail, a non-residential or commercial parcel, provides adequate screening between this project and the neighboring residential uses.

(3) Although the location of the trees in relationship to the property line is not met, the project otherwise complies with all components of the regulation (caliper, height, quantity). The limitation to provide trees at a lesser distance to the property line as described still meets the purpose of the standard to promote safety, compatibility, and efficiency, and enhance the overall visual attractiveness of the building, the site and the City.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.2.B.4.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

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Structural Engineers
Traffic Engineers
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Scientists

August 12, 2024~~,~~ *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request–Lebanon Site Plan Regulations Section 6.2.B.6–Perimeter Landscape Width
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a partial waiver from Section 6.2.B.6 of the Lebanon Site Plan Regulations to permit seven and a half (7.5) feet of perimeter width on west property line where 10 (ten) feet is required.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.2.B.6 meets Criteria B because:

(1) Due to the geometry of the existing lot and corresponding location of a flood plain, the proposed building, parking and access areas have been sited accordingly to minimize impacts to the flood plain. The resulting layout of these site elements provides an available width for perimeter landscaping of 7.5-feet along the westerly property line of the subject site. In that minimizing impacts to the flood plain is paramount to public health and safety, requiring relocation of the development components to meet the 10-feet requirement and create otherwise undue impacts to the flood plain, would not be in the public's best interests, and as such a waiver is justified.

(2) The abutting use of Lot 92-33 consists of a self-storage facility and providing an additional three (3) feet of perimeter landscaping width would not outweigh the negative impact of additional flood plain impacts to shift site elements to the east.

(3) Although the full perimeter landscape width is not met, the project otherwise complies with all components of the regulation (opaqueness). The limitation to provide a lesser width then required for the perimeter landscaping area as described still meets the purpose of the standard to promote safety, compatibility, and efficiency, and enhance the overall visual attractiveness of the building, the site and the City.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.2.B.6.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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August 12, 2024, *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request–Lebanon Site Plan Regulations Section 6.2.D.1–Building Landscape Width
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a waiver from Section 6.2.D.1 of the Lebanon Site Plan Regulations to permit a five (5) feet landscape width around the building where 10 (ten) feet is required as detailed below.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.2.D.1 meets Criteria B because:

(1) Due to the geometry of the existing lot and corresponding location of a flood plain, the proposed building, parking and access areas have been sited accordingly to minimize impacts to the flood plain. The resulting layout of these site elements, and the provisions to provide a suitable width of perimeter landscaping have been balanced, and result in the dedication of a 5-foot-wide landscape bed proposed along a small portion on the east side of the building (59 LF of the 817 LF of the building perimeter), where a 10-foot width is required. In that minimizing impacts to the flood plain is paramount to public health and safety, requiring relocation of the development components to meet the 10-feet requirement and create otherwise undue impacts to the flood plain, would not be in the public's best interests, and as such a waiver is justified.

(2) Although the full building landscape width is not met, the project otherwise complies with the other components of the regulation (quantity, type). The limitation to provide a lesser width then required for the building landscape area as described still meets the purpose of the standard to promote safety, compatibility, and efficiency, and enhance the overall visual attractiveness of the building, the site and the City.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.2.D.1.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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August 12, 2024

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request – Lebanon Site Plan Regulations Section 6.6.C.1.2.k – Test Pits
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a waiver from Section 6.6.C.1.2.k of the Lebanon Site Plan Regulations to not provide test pits within locations of stormwater treatment practices.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.6.C.1.2.k meets Criteria B because:

(1) Based upon coordination with the City, it was determined that the existing municipal closed drainage along Spencer Street has adequate capacity to accommodate post-development stormwater runoff flows associated with the proposed development. The proposed design provides pre-treatment of stormwater runoff via deep sump catch basins within the on-site paved and concrete areas. The proposed will discharge to the existing closed drainage system, a portion which is encompassed within an existing drainage easement, in favor of the City.

(2) Collected stormwater runoff will be conveyed, attenuated, and pre-treated prior to entering the municipal system. There is no increase in peak rate of runoff or volume discharging to abutting properties Lots 92-33 or 78-39 in the post-development design.

(3) As there are no formal stormwater management areas proposed, conducting test pits would not be applicable as no infiltration to in-situ soils is proposed.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.6.C.1.2.k.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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August 12, 2024, *revised August 26, 2024*

To: Nathan Reichert, Planning & Development Director
City of Lebanon Planning & Development Department
51 N. Park Street, 5th Floor
Lebanon, NH 03766

RE: Waiver Request – Lebanon Site Plan Regulations Section 6.6.G.2 – Stormwater Management
The Muse Apartments
20 Spencer Street, Lebanon, NH 03766
Tax Map 92, Lot 31

Dear Nathan,

On behalf of our client, The Muse Lebanon, LLC, and owner, The City of Lebanon, we respectfully request a partial waiver from Section 6.6.G.2 of the Lebanon Site Plan Regulations to permit an alternative stormwater design consisting of pretreatment for the entire site and treatment for approximately 20,155 SF of paved parking.

Under Article VII of the Site Plan Regulations, the Planning Board may grant a waiver of the regulations if the Board finds that:

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 6.6.G meets Criteria B because:

(1) Through a coordinated effort with the City Engineering Group a stormwater management plan has been devised that seeks to meet the goals of Section 6.6 – Stormwater Management, to the maximum practicable extent, while also balancing the benefits of the redevelopment as compared to development of raw land. Through this evaluation it was acknowledged that the rebuilt municipal closed drainage system within Spencer Street had been designed with appropriate capacity to accommodate the redevelopment of the subject lot, such that there would be no negative ramifications for additional peak rates of runoff from the site to the municipal system. The proposed stormwater management design provides pre-treatment of stormwater for all impervious areas through the use of deep sump catch basins and provides treatment of approximately 20,155 sf of paved parking and sidewalks through a self-contained water quality unit. In that paved parking and circulation areas are the largest generators of potential stormwater pollutants associated with the redevelopment, these areas were successfully targeted to provide treatment to the extent practicable, acknowledging that currently no treatment is provided for the entirety of site.

(2) There are additional specific factors that support the use of an alternative stormwater management design;

   a. A portion of the site is located within a flood plain. Locating stormwater storage and associated treatment practices within a flood plain would not have the desired benefit as surcharging of the system would take place during large storm events, negating the effective storage.

   b. The known environmental conditions relating to groundwater management permit No. 198806030-L-001 due to the prior use of the site and the conditions of underground storage tanks. This permit demonstrates that infiltration into existing soil would not be appropriate.

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c. The proximity of the Mascoma River and its associated watershed. The use of a stormwater BMP that results in detaining stormwater onsite such that its release would better coincide with the peak flows of the river would not be advisable and is not in the publics best interests and could create potential adverse effects to public safety and welfare.

(3) The alternative stormwater management design results in reductions in the peak rates of runoff to all other abutting properties.

We feel this request is appropriate and consistent with the expectations of the Planning Board, and that granting this waiver would not be contrary to the spirit and intent of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 6.6.G.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

City of Lebanon, New Hampshire

APPLICATION FOR CONDITIONAL USE PERMIT SUPPORT STATEMENT

Office Use Only Date Received: _____ Application No.: _____

I. APPLICATION CHECKLIST

- *Application form*
- *Public Hearing Notification List*
- *Filing fee*
- *This form, including written responses to the Section 302.4.D requirements, outlined below*
- *A site plan*
- *Optional: photos and any other materials in support of your application*

II. PROJECT DESCRIPTION

I (we) hereby request a Conditional Use Permit as provided for in Article(s) III, Section(s) 307.6.B.2, of the Lebanon Zoning Ordinance.

Please describe your proposed project with as much detail as possible. You can respond in the space provided below or on a separate sheet of paper.

See attached.

III. CONDITIONAL USE PERMIT CRITERIA

In order to obtain a Conditional Use Permit, you must demonstrate to the Planning Board that the proposal satisfies the applicable criteria set forth in Sections A and B below. You must address each criteria in the space provided or on a separate sheet of paper.

A. Specific Criteria

The Conditional Use Permit is authorized by Article III, Section 307.6.B.2 of the Zoning Ordinance which requires the applicant to demonstrate that (*please address any criteria set forth in the Zoning Ordinance that specifically apply to your proposed use or project*):

See attached.

B. General Criteria per Section 302.4.D

A conditional use permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following standards:

1. The site is suitable for the proposal. This includes:

   a. Adequate vehicular and pedestrian access for the intended use.

   See attached.

   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

   See attached.

   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

   See attached.

   d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

   See attached.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

   See attached.

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

   See attached.

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

   See attached.

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

   See attached.

Project Description:

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.

Specific Criteria:

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
    - We have selected a 4-story, wood-frame, double-loaded corridor building with surface parking as the best means to accomplish this. The project will work to provide affordable housing at a range of income levels. In accordance with the "Average Income Test" under Section 42, we will seek funding and resources to provide housing for a broad spectrum of the workforce, ranging from households earning extremely low incomes (30% AMI) to moderate incomes (80% AMI).. Ultimately, the number of such units in each income band will depend on the availability of public resources.
- Create spaces that inspire artists and add to the community's cultural vitality
    - Existing cultural institutions like AVA Gallery, the Lebanon Opera House, and the Upper Valley Music Center help position the City of Lebanon as a hub for the arts and culture within the Upper Valley. However, high housing costs and the lack of affordable housing for artists threaten the vitality of Lebanon's creative economy and cultural institutions. 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 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.
    - The benefits of having community art spaces and live-work units for artists are not limited to people employed in the arts or who simply enjoy the arts: Exposure to the arts has demonstrable positive effects on low-income families and children. Research by the University of Pennsylvania's School of Social Policy & Practice found that low-income New York City residents who are exposed to the arts enjoy better education, security and health outcomes than their counterparts with lower exposure to the arts. Similarly, the National Endowment for the Arts report, "The Arts and Achievement in At-Risk Youth" demonstrated a variety of positive outcomes, including a finding that low-income students who have high levels of exposure to the arts are twice as likely to graduate college than their peers with low arts exposure. By coupling safe, modern, affordable housing with space for the arts, the Muse Apartments is designed to be a positive, vibrant, and uplifting environment for all of its residents.

- Develop a site that is connected and integrated with the broader community and streetscape
    - 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 me, 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.
- Construct a building and physical infrastructure that is energy efficient and lasting
    - From its initial conception, the Muse Apartments has been designed to be at the forefront of energy-efficient building practices in New England. Based on preliminary energy modeling by Thornton Tomasetti (the Development Team's passive house consultant), the Muse Apartments will achieve Passive House CORE Compliance, meeting Phius 2021 Design Criteria Targets. The project anticipates extremely low energy consumption (Source Energy) of 4,450 kWh/person-year. Complete details of the Muse Apartments' energy efficiency goals and Passive House benchmarks are contained in the Passive House Feasibility Report by Thornton Tomasetti included as an appendix to this proposal.

General Criteria per Section 302.4.D:

1. The site is suitable for the proposal

A Adequate vehicular and pedestrian access for the intended use.

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. 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.

B The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

Adequate public services are available for the project. Sidewalk and parallel parking currently exist along the frontage of the property and interconnection to the adjacent rail trail is facilitated by the development.

C The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

There are no wetlands or steep slopes on the existing vacant property. Impacts to flood zone are mitigation by onsite compensatory storage predicated on the proposed site grading.

D The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

Existing municipal services have been stubbed on site (water, sewer and drainage) with electrical service also readily available.

2. External impacts

The site as designed meets the hallmarks of this criterion consistent with the 20 Spencer Street RFP as proposed by the City of Lebanon. The development does not create any undue aggravation on abutting properties and its use as affordable housing is in keeping with the City Master Plan and Downtown Visioning Study, drastically improving the conditions of an otherwise underutilized property.

3. Character of the site development

Similar to the above stated response to external impacts, the character of the site development has be meticulously crafted for consistency with the expectation of the City of Lebanon as outlined in the 20 Spencer Street RFP, providing appropriate buffers, as well as multimodal opportunities with vehicular, bicycle and pedestrian access to and within the site.

4. Character of the buildings and structures

The proposed building does not stray from the established character of the neighborhood and by coupling safe, modern, affordable housing with space for the arts, the Muse Apartments is designed to be a positive, vibrant, and uplifting environment for all of its residents.

5. Preservation of natural, cultural, historic and scenic resources

Natural, cultural, historic and scenic resources are limited on the subject property given its previously developed, but current vacant status. Limited flood plain impacts are mitigated by commensurate on-site storage via the proposed site grading.

City of Lebanon, New Hampshire
APPLICATION FOR CONDITIONAL USE PERMIT SUPPORT STATEMENT

Office Use Only	Date Received: _____	Application No.: _____

I. APPLICATION CHECKLIST

- *Application form*
- *Public Hearing Notification List*
- *Filing fee*
- *This form, including written responses to the Section 302.4.D requirements, outlined below*
- *A site plan*
- *Optional: photos and any other materials in support of your application*

II. PROJECT DESCRIPTION

I (we) hereby request a Conditional Use Permit as provided for in Article(s) III, Section(s) 307.8.C, of the Lebanon Zoning Ordinance.

Please describe your proposed project with as much detail as possible. You can respond in the space provided below or on a separate sheet of paper.

See attached.

III. CONDITIONAL USE PERMIT CRITERIA

In order to obtain a Conditional Use Permit, you must demonstrate to the Planning Board that the proposal satisfies the applicable criteria set forth in Sections A and B below. You must address each criteria in the space provided or on a separate sheet of paper.

A. Specific Criteria

The Conditional Use Permit is authorized by Article III, Section 307.6.B.2 of the Zoning Ordinance which requires the applicant to demonstrate that (*please address any criteria set forth in the Zoning Ordinance that specifically apply to your proposed use or project*):

See attached.

B. General Criteria per Section 302.4.D

A conditional use permit shall be granted only if the Planning Board determines that the proposal conforms to all of the following standards:

1. The site is suitable for the proposal. This includes:

   a. Adequate vehicular and pedestrian access for the intended use.

   See attached.

   b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

   See attached.

   c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

   See attached.

   d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

   See attached.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

   See attached.

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

   See attached.

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

   See attached.

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall to the greatest extent practicable preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

   See attached.

Application for CUP: Article III Section 307.8.C – First Floor Height Less than 12'
The Muse Lebanon

Project Description:

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.

Specific Criteria:

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
    - We have selected a 4-story, wood-frame, double-loaded corridor building with surface parking as the best means to accomplish this. The project will work to provide affordable housing at a range of income levels. In accordance with the "Average Income Test" under Section 42, we will seek funding and resources to provide housing for a broad spectrum of the workforce, ranging from households earning extremely low incomes (30% AMI) to moderate incomes (80% AMI). Ultimately, the number of such units in each income band will depend on the availability of public resources. Additionally, the unit matrix distributes the 80 units into five unique offerings: three-bedroom, two-bedroom, two-bedroom live-work, single-bedroom and studio.
- Create spaces that inspire artists and add to the community's cultural vitality
    - Existing cultural institutions like AVA Gallery, the Lebanon Opera House, and the Upper Valley Music Center help position the City of Lebanon as a hub for the arts and culture within the Upper Valley. However, high housing costs and the lack of affordable housing for artists threaten the vitality of Lebanon's creative economy and cultural institutions. 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 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.
    - The benefits of having community art spaces and live-work units for artists are not limited to people employed in the arts or who simply enjoy the arts: Exposure to the arts has demonstrable positive effects on low-income families and children. Research by the University of Pennsylvania's School of Social Policy & Practice

found that low-income New York City residents who are exposed to the arts enjoy better education, security and health outcomes than their counterparts with lower exposure to the arts. Similarly, the National Endowment for the Arts report, "The Arts and Achievement in At-Risk Youth" demonstrated a variety of positive outcomes, including a finding that low-income students who have high levels of exposure to the arts are twice as likely to graduate college than their peers with low arts exposure. By coupling safe, modern, affordable housing with space for the arts, the Muse Apartments is designed to be a positive, vibrant, and uplifting environment for all of its residents.

- Develop a site that is connected and integrated with the broader community and streetscape
    - 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 □me, 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.
- Construct a building and physical infrastructure that is energy efficient and lasting
    - From its initial conception, the Muse Apartments has been designed to be at the forefront of energy-efficient building practices in New England. Based on preliminary energy modeling by Thornton Tomasetti (the Development Team's passive house consultant), the Muse Apartments will achieve Passive House CORE Compliance, meeting Phius 2021 Design Criteria Targets. The project anticipates extremely low energy consumption (Source Energy) of 4,450

kWh/person-year. Complete details of the Muse Apartments' energy efficiency goals and Passive House benchmarks are contained in the Passive House Feasibility Report by Thornton Tomasetti included as an appendix to this proposal.

General Criteria per Section 302.4.D:

1. The site is suitable for the proposal

A Adequate vehicular and pedestrian access for the intended use.

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. 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.

B The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.

Adequate public services are available for the project. Sidewalk and parallel parking currently exist along the frontage of the property and interconnection to the adjacent rail trail is facilitated by the development.

C The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.

There are no wetlands or steep slopes on the existing vacant property. Impacts to flood zone are mitigation by onsite compensatory storage predicated on the proposed site grading.

D The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

Existing municipal services have been stubbed on site (water, sewer and drainage) with electrical service also readily available.

2. External impacts

The site as designed meets the hallmarks of this criterion consistent with the 20 Spencer Street RFP as proposed by the City of Lebanon. The development does not create any undue aggravation on abutting properties and its use as affordable housing is in keeping with the City Master Plan and Downtown Visioning Study, drastically improving the conditions of an otherwise underutilized property.

3. Character of the site development

Similar to the above stated response to external impacts, the character of the site development has be meticulously crafted for consistency with the expectation of the City of Lebanon as outlined in the 20 Spencer Street RFP, providing appropriate buffers, as well as multimodal opportunities with vehicular, bicycle and pedestrian access to and within the site.

4. Character of the buildings and structures

The proposed building does not stray from the established character of the neighborhood and by coupling safe, modern, affordable housing with space for the arts, the Muse Apartments is designed to be a positive, vibrant, and uplifting environment for all of its residents.

5. Preservation of natural, cultural, historic and scenic resources

Natural, cultural, historic and scenic resources are limited on the subject property given its previously developed, but current vacant status. Limited flood plain impacts are mitigated by commensurate on-site storage via the proposed site grading.

Section 6.10 Additional Regulations for the Lebanon Downtown District

B. Building Design

1. ***Preservation. Within the Lebanon Downtown District, existing and significant historic features of the building and the site should beretained, protected, and incorporated into renovations and complementary new developments. New buildings adjacent to significant historic resources should be designed to complement those resources, such as through use of matching proportions, horizontal expression lines, materials, and/or attention to architectural details like trims and secondary accents. Applications for new development in the Lebanon Downtown District may be required by the Planning Board to include a short narrative on compatibility, with reference to the structural details in the Colburn Park Historic District National Register nomination.***
   The Muse Project is not located within the Colburn Park Historic District. Surrounding property uses range from pre-war single-family homes, the large 2004 vintage apartment complex at Emerson Place, and industrial uses ranging from early 20th Century (10 Spencer) to relatively modern self-storage uses currently under construction (38 Spencer). Without specific, significant historic resources in the immediate vicinity, the Muse Project is designed with a neutral color palette and clapboard style siding as the primary cladding to fit in contextually with the surrounding buildings. The project incorporates an iron spot brick base at the primary pedestrian entrance to acknowledge and respond to the historical use of brick at 10 Spencer Street and throughout the riverfront mill area.

2. ***Materials. Primary construction materials shall be durable, emphasize high- quality finishes, and promote long-term community use, resilience, and character. Along the Downtown Mall and facing Colburn Park, wood siding is discouraged; instead, consider materials such as stone, masonry, unpainted metal, glass, burnished block, or cement fiber siding. Creative architectural design and innovative materials that support best practices in durability, ease of maintenance and sustainability are encouraged. Secondary facades or those not facing public streets, parks or plazas, may differ in finish materials from principal facades but must adhere to all other provisions and be of similar quality to principal facades.***
   The Muse Project is not located along the Downtown Mall or Coburn Park. The façade materials were selected to provide a clean, durable look for the long-term. The mix of materials are resistant to rot and pests and provide a cohesive look of brick, vinyl, and fiber cement panels.

3. ***Opaque Surfaces. Areas of opaque or blank wall without windows or doors shall extend no more than 20 feet horizontally on or along any building facade that faces a public way, park, or plaza and shall be mitigated by design strategies like varied materials, contrasting textures or depths, decorative reliefs, green walls, murals, or other architectural and landscaping strategies.***
   Given the residential use, windows and doors extend consistently along the facades much more frequently than every 20 feet, consistent with this regulation.

4. ***Façade Detail. Facades shall include horizontal lines of expression—such as string courses, cornices, window alignments, step-backs, building- affixed lighting, sign bands, material changes, and/or shading devices—to demarcate building floors and uses, to correspond to the height of adjacent historic or significant buildings, and to provide a well-proportioned pattern to the building facade.***

The overall building design is inspired by the 19th century mill architecture along the Mascoma River and throughout much of New Hampshire. The Muse Project's elevations create a dynamic street-level experience by incorporating building overhangs and storefront style doors at the entry plaza, which consists of the main entrance and art gallery location. Furthermore, the street level entrances to the artist live-work units along Spencer Street and associated roof overhangs and stoop-conditions create a prominent ground-floor to the Muse structure that allows for landscaping along the building frontage while engaging with the street at a pedestrian level. Drawing on the mill building inspiration, the three upper stories feature vertically proportioned windows horizontally aligned at regular intervals and pulled together through the use of horizontal lap siding. The rhythm of these window openings are broken up by vertical board and batten bands and articulation of the building form, creating an attractive and nuanced design.

5. ***Screening. HVAC, mechanical and electrical equipment, transformers, plumbing, meter clusters, refuse and other utility and storage elements must be screened or otherwise integrated unobtrusively into the overall building and site design and away from the public view as much as possible.***

The primary mechanical functions for the building will be located on either the east or southern elevations, away from the public right of way and view. From the pedestrian perspective, roof-top mounted solar and mechanical uses will largely be hidden by the line-of-sight angle from sidewalks to the rooftop. It is not possible to provide exact locations of these elements at this phase of the project because MEP plans for affordable housing projects are only developed after a reservation of funding, but the overall location of such elements will ensure compliance with this provision.

6. ***Orientation. Buildings shall be oriented towards public ways and sidewalks to prioritize pedestrian access. Buildings shall respond to public trails, including the Northern Rail Trail and Mascoma River Greenway, as a secondary access point where appropriate. Along the riverfront and Downtown Mall, buildings shall be oriented towards major public spaces and pedestrian ways.***

Taking inspiration from Lebanon's Master Plan and Downtown Visioning Study, the Muse Project 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 building itself speaks directly to the Spencer Street experience: 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 lively mixed-use atmosphere—notwithstanding the fact that the project is 100% affordable housing. Additionally, 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 and members of the public. 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. With a Walk Score® of 72 ("Very Walkable"), 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 (1.1 spaces per unit) with a very high bike-parking ratio (1 space per unit) that far exceeds the applicable

site plan regulations.

7. ***Form. Facades of larger buildings shall demonstrate variation and include elements at a range of scales that help relate the overall building to the size of nearby buildings, prevent a monolithic appearance, and promote good scale relationships to a variety of context elements.***

   a. ***Large façades with over 100 linear feet of building frontage shall incorporate variations in materials and architectural styles, as well as details. Changes in massing, shape, or plane shall emphasize vertical proportions in the overall building massing. The maximum building length is 350 feet, or up to 500 feet if a pedestrian passage is provided in the approximate center.***
   The Muse project provides a varied and visually interesting building façade through a combination of saw-toothed articulation, street-level entrances to artistic spaces, and vertical bands to break up horizontal spaces. As a result, façade lines in excess of 100' are well articulated and defined. The building is less than 350 feet in length, consistent with this regulation.

   b. ***Pedestrian-oriented entrances shall be provided at least every 60 linear feet unless such egress would create safety or security concerns for the building use. In such instances, a significant architectural feature that creates varied massing, such as a bay window or other feature, must be provided every 60 linear feet of the principal building façade.***
   In order to activate the main community entrance and gallery space and facilitate connectivity with the rail trail, the Muse project treats the northwest entrance of the building as the most prominent entrance point. Given the ground floor residential uses, strict compliance with providing entrances every 60 feet for the entire building would hinder the privacy and security of certain ground-floor residential units. However, along the Spencer Street façade, the artist-live work units have dedicated entrances roughly every 50 to 70 feet.

   c. ***Stair towers and elevators, where visible from the street, shall be designed with consideration of their potential as a strong vertical design element.***
   The Muse project provides vertical banding through the use of board and batten style siding at major building breaks.

8. ***Roof. Design and elements should vary by use and location.***

   a. ***Roofs may be flat or sloped as most appropriate to the use of the building, site features, and the context of neighboring buildings, and with consideration to solar potential and to directing snow/runoff to appropriate facilities to prioritize safety.***
   The flat roof is designed to allow for roof-mounted solar along the major southern exposure in order to achieve Phius/Passive House standards. From the pedestrian perspective, roof-top mounted solar and mechanical uses will largely be hidden by the line-of-sight angle

from sidewalks to the rooftop.

b. ***The roof edge must be articulated and offer visual interest through features such as a cornice, parapet, soffit, or overhang. The design emphasis shall be on the building's street-facing facades, with consideration to the overall profile and character of the downtown Lebanon skyline from gateway approaches and high-volume pedestrian routes.***

The roof structure of the Muse project occurs on two separate planes: (i.) the first-floor level roof overhang that define the main entrance and live-work units and, (ii.) the main roof of the building over the fourth floor. The first-floor level roof incorporates overhangs, stoop roofs supported by columns, and roof-mounted signage to create a dynamic street-level experience. The upper roof over the fourth floor is defined by a clean, modern, straight edge of trim. This two-tiered design of the roof focuses attention on the pedestrian-level experience and avoids drawing unnecessary attention to the building's height.

c. ***Decorative features including cupolas, finials, dormers, chimneys or weather vanes, and/or cresting should also be considered as part of an overall roof treatment, particularly as a part of prominent buildings and where such details are complementary to surrounding neighborhoods.***

Based on surrounding land uses and the overall design aesthetic of the Muse project, decorative rooftop features were considered but not included in the roof design to avoid feeling anachronistic or inauthentic.

d. ***Roof space may be utilized to accommodate building HVAC and similar systems, with screening where necessary, and to incorporate sustainability features such as passive solar orientation, rainwater or snowmelt capture, and/or installation of renewable energy equipment. Usable open spaces provided as part of features such as roof decks and green roofs are also appropriate.***

The roof is designed to allow for roof-mounted solar along the major southern exposure to help achieve Phius/Passive House standards and reduce the project's carbon footprint. From the pedestrian perspective, roof-top mounted solar and mechanical uses will largely be hidden by the line-of-sight angle from sidewalks to the rooftop.

9. ***Building Façade Transparency. The transparency requirements set forth in this section are intended to support and encourage vibrant and active shopping and dining areas in Downtown Lebanon.***

Spencer Street is considered a Secondary Street. The Muse project complies with the transparency requirements for residential uses 25% of the first-floor façade being transparent and 25% of the upper story facades being transparent. In accordance with Section 9.b.II.b and Section 9.c.II, the façade area occurring at the floor and roof structures are not included in this calculation.

10. ***Entrances.***

a. ***The primary entrance to the building shall be oriented toward the street on which the lot has frontage. If the lot has frontage on both a primary street and secondary street, as defined above, the main entrance shall***

be oriented toward the primary street on which the lot has frontage. If the lot has frontage on more than one primary street, the main entrance to the building shall be oriented toward the street that carries the greatest volume of pedestrian and vehicle traffic.

In order to activate the main community entrance and gallery space and facilitate connectivity with the rail trail, the Muse project treats the northwest entrance of the building as the most prominent entrance point.

b. ***Entrance features shall provide weather protection. Such features may include covered entrance features, vestibules or recessed entrances, canopies, and/or awnings. Retractable awnings or other removable entrance features are permitted as appropriate to building use and design. When such open-air structures are provided as part of an entrance feature, they shall provide at least 8 feet and 6 inches of vertical clearance from grade, be compatible with any sign bands, and provide an average depth of at least 5 feet.***

As shown on the plan, the main entrance feature provides a plaza style entrance with connectivity between Spencer Street and the Rail Trail. The overhangs and awnings satisfy the weather protection requirements of this section.

c. ***Buildings with ground floor residential uses shall include raised landings, weather protection, stoops, porches, and/or decks, for each lobby or unit accessed from the exterior at the ground-floor level.***

The Muse project's live-work units provide ground floor pedestrian access and display spaces for artists. These stoop spaces help establish a mixed-use atmosphere along Spencer Street—notwithstanding the fact that the project is 100% affordable housing.

C. ***SITE DESIGN***

1. ***Pedestrian Access.***

a. ***Each building entrance must be designed to prioritize convenience and directness for that respective entrance's anticipated main source(s) of pedestrian traffic, such as transit stops and parking areas. The primary building entrance, or the entrance that will accommodate most pedestrians entering a building, must be inviting and prominent in appearance, demonstrate visibility from the primary public right-of-way, and support the accessibility function required of all entrances. Pedestrian access includes paths, sidewalks, trails, or other features. Universally-accessible design strategies are appropriate for all pedestrian access features.***

The Muse project has been designed to prioritize pedestrian and bicycle connectivity, particular by creating new connections between the Northern Rail Trail, Spencer Street, and various elements of the Mascoma riverfront. The entry plaza, which features artists gallery space as well as bicycle parking, is prominently positioned to be visible to folks arriving from the Downtown area. The new pathway

connecting the Muse project to the rail trail will be paved and also incorporate access to a new playground area on the rail trail parcel.

b. ***Where pedestrian access is provided through an on-site parking area, the walkway or pedestrian aisle must be clearly demarcated by contrasting paint, material changes or textured surfacing, reflectors, safety signage, landscaping, or attractive barriers. The transition area between pedestrian access and building entrance, particularly for on-site crosswalks, shall be highlighted through curb extensions (bump outs), planters, pedestrian-scale lighting such as decorative bollards, or similar features to enhance accessibility, visibility, safety, wayfinding, and landscaping.***
Pedestrian access from Spencer Street and the Rail Trail does not require crossing on-site parking areas. Notwithstanding, the use of a grasscrete product for the fire-turnaround at the end of the parking area helps provide a natural transition from vehicle uses to pedestrian uses as anticipated by this regulation.

2. ***Front Yards.***

c. ***Ground Floor Residential.***

i. ***The front yards of buildings with ground floor residential uses must create a comfortable transition between the private residential unit and public right-of-way, as may be provided by compact yards, porches, stoops, or other features that allowfor privacy, improved streetscape, and attractive building entrances.***
As shown on the plan, the main entrance feature provides a plaza style entrance with connectivity between Spencer Street and the Rail Trail. The Muse project's live-work units provide ground floor pedestrian access and display spaces for artists. These stoop spaces help establish a mixed-use atmosphere along Spencer Street—notwithstanding the fact that the project is 100% affordable housing.

ii. ***The front yard shall be improved with landscaping appropriate to the site features and context of neighboring properties. Usable open space that is readily-accessible by building occupants and landscaped for active or passive recreation is encouraged as part of front yards.***
The landscape and hardscape design of the entry plaza creates usable indoor-outdoor space at the building's main entrance. Depending on building programming and the success of the live-work artist concept, this area could be used as interstitial space for members of the community or public visiting artistic exhibitions in the community gallery.

iii. ***Service areas, equipment storage, meters, waste enclosures and similar functions shall not be located in the front yard.***
No such services are located in the front yard.

3. **Perimeter Landscaping. Perimeter landscaping shall comply with the requirements for front yards and screening of parking areas, and, where proposed development of the site allows, the requirements for perimeter landscaping in Section 6.2.B.**
The proposed landscaping designed satisfies and exceeds the requirements for the number of plantings required for screening and buffering in the Site Plan Regulations. To the extent that 6.2.B is applicable to this project in the Lebanon Downtown District, certain site constraints, including the existing sidewalk encroachment along the property frontage, the area outside of the floodplain on the westerly half of the site, and the rail trail to the south, waivers have been requested from certain sections of 6.2.B. Notwithstanding, the site provides robust landscaping throughout and significantly enriches the existing brownfield condition.

4. ***Screening of Parking Areas. Parking areas shall be screened to ensure that they do not detract from downtown appearance or walkability. Off-street parking shall be designed to have a minimal presence, if any, along streets and other public spaces.***
The site plan of the Muse project has been designed to locate the primary parking areas to the rear of the apartment building to screen visibility of vehicles from the public way. As such, they do not detract from the downtown appearance or the pedestrian nature of the Muse Project. By locating the entrance to the parking area as far as possible from the entry plaza, the primary experience for visitors is pedestrian focused rather than vehicle focused.

a. ***Accessory Parking Areas. For parking areas located on the same lot as a building containing the principal use, a landscaped buffer of at least 5 feet shall be provided along the frontage of any primary street or secondary street, as defined above. The buffer shall be designed to create an attractive streetscape and shall be provided through an appropriate combination of plantings, planters, benches, fences, public art, pedestrian-scale lighting, and low walls under four feet in height.***

The site plan of the Muse project has been designed to locate the primary parking areas to the rear of the apartment building to screen visibility of vehicles from the public way. In the minimal area where cars enter the parking area from Spencer Street, the landscaping buffer between Spencer Street and the first parking space exceeds 5' and includes both trees and shrubs.

5. ***Relationship to Adjacent Properties.***

a. ***District and Street-level Character. The building and site design must respond to the unique qualities and roles of different streets. For example, the design of lighting, awnings, storefronts, window displays, and other elements should help to define retail presence and reinforce local neighborhood and district character through application of compatible and/or common styles that foster a coherent downtown identity.***
Spencer Street lacks a strong neighborhood identity and has a variety of land uses around the 20 Spencer Street site. It is transitional between older industrial uses and the future of Lebanon's downtown area. The Muse project seeks to develop an inclusive, art-and-pedestrian focused site to help spur the continuing evolution of this part of the Downtown District. The entry plaza at the northwest corner of the site and live-work artist units along the Spencer Street frontage help create a mixed-use atmosphere within this section of Spencer Street. The high-quality architectural design and building material selections help to create a modern and attractive streetscape at this location.

b. ***Privacy Standards. Balconies or rooftop decks within 15 horizontal feet of a side property line abutting a residentially zoned property must feature a railing system such that at least 50% of the area below the railing is an opaque material.***
No balconies or rooftop decks are proposed.

c. ***Ensuring Adequate Light and Air Access. Buildings or portions thereof containing multi-family residential units whose only operable windows or solar access are on the applicable side of the building (facing towards the side or rear property line) should be set back from the applicable side or rear property lines at least 15 feet.***
This requirement is satisfied with all residential windows separated by greater than 15 feet from side or rear property lines.

Statement of impact of the proposed development on 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.

The Muse project proposal consists of the redevelopment of a previously developed brownfields site within the urban core of Downtown Lebanon for multifamily housing. This type of compact, high-density development in an urban area has a significantly reduced environmental impact compared to more sprawling development in less developed areas. Given the history of soil contamination at the 20 Spencer Street site, the redevelopment will involve significant oversight and pre-construction planning to prevent negative impacts and create a safe, clean, livable environment.

In its current state, the 20 Spencer Street site is covered with deteriorated pavement and other impervious areas. The redevelopment will improve stormwater management by meeting current stormwater standards and tying-into existing municipal infrastructure with pretreatment. During construction, soil erosion controls will be taken in accordance with the engineered plans.

The site is free from wetlands and is not suitable for agricultural purposes given the history of contamination. The grading design of the site has carefully considered floodplain impacts and effectively results in no loss of floodplain storage relative to existing conditions.

The Muse project seeks to achieve Passive House (PHIUS) certification to meet the highest standards of sustainability. Anticipated rooftop photovoltaic panels will further reduce the site's carbon footprint.

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

NH Housing's Study, "Housing and School Enrollment in New Hampshire: An Expanded View," and other studies indicate that workforce rental housing generates modest numbers of school aged children relative to other residential development. The NH Housing study indicated that, on average, a 1-bedroom unit in a multifamily building generates approximately 0.04 school aged children; 2-bedroom units, 0.24 school aged children; and 3-bedroom units, 0.98 school aged children. It is anticipated that between 10-20 school children would live in this project, reflecting only one to two students per grade level at full occupancy.

The Hanover Street School is approximately 1.2 miles away from the site.

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

Spencer Street benefits from having been recently reconstructed to provide greater pedestrian access, drainage, and on-street parking. The Muse project will improve connectivity between the Spencer Street, the project site, and the Northern Rail Trail.

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

The site is serviced by municipal utilities, and the infrastructure within Spencer Street was upgraded when the right-of-way was improved. The project team does not anticipate any negative impacts on overall municipal services from The Muse project.

Any special fire, police and public safety problems due to location and/or special conditions related to the site's proposed type of use.

The project team does not anticipate any unique concerns associated with The Muse project. Auto-turn analysis of the City of Lebanon Fire Department's fire truck turning maneuvers through the site indicate that fire apparatuses can safely and efficiently circulate around the building and through the site. There is no evidence whatsoever that workforce housing in New Hampshire results in police or public safety problems.

Impact of storm drainage from the development on abutting properties and potential storm drainage problems both on the site of the development and downstream from the development.

Based on the 20 Spencer Street site's previous and existing conditions, it is anticipated that the redevelopment will improve stormwater management through the provision of pretreatment practices. A full analysis of the proposed stormwater management system is provided in the full application materials.

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

The Muse project's redevelopment of the municipal site at 20 Spencer Street will add a property back onto the City's property tax-rolls and result in revenue of $400,000 to the City from the sale of the property. Based on an analysis for the project's proforma, the project anticipates providing property tax revenues of approximately $110,000 per year pursuant to RSA 75:1-a. More

importantly, The Muse project will provide safe, clean, affordable housing to support Lebanon and the Upper Valley's workforce and creative community. The availability of well-located workforce housing, such as The Muse, has a multiplier effect on the local and regional economy by increasing employee retention, reducing commuting costs, and improving long-term economic outcomes for households and families with low incomes.

CERTIFIED NOTIFICATION LIST

Notice shall be sent by certified mail to the Owner; Applicant, if different from Owner; Abutters; Holders of conservation, preservation, or agricultural preservation restrictions (as defined under RSA 477:45) on the subject property; the holders of easements, rights-of-way, and other restrictions; and every engineer, architect, land surveyor, or soil or wetlands scientist whose seal appears on any plan submitted to the Board; and any other persons required by RSA 676:4, I(d). The names and mailing addresses shall be furnished by the Applicant.

672:3 Abutter. – "Abutter" means any person whose property is located in New Hampshire and adjoins or is directly across the street or stream from the land under consideration by the local land use board. For purposes of receiving testimony only, and not for purposes of notification, the term "abutter" shall include any person who is able to demonstrate that his land will be directly affected by the proposal under consideration. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a condominium or other collective form of ownership, the term abutter means the officers of the collective or association, as defined in RSA 356-B:3, XXIII. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a manufactured housing park form of ownership as defined in RSA 205-A:1, II, the term "abutter" includes the manufactured housing park owner and the tenants who own manufactured housing which adjoins or is directly across the street or stream from the land under consideration by the local land use board.
Source. 1983, 447:1. 1986, 33:2. 2002, 216:1, eff. July 15, 2002.

PLEASE PROVIDE NAMES & MAILING ADDRESSES FOR ALL PERSONS LISTED ABOVE.

Map & Lot Number: 92-31	**Map & Lot Number:**
Owner MAP 92 LOT 31 CITY OF LEBANON 51 NORTH PARK STREET LEBANON, NH 03766	APPLICANT THE MUSE LEBANON, LLC PO BOX 847 HOLLIS, NH 03049
Map & Lot Number: 92-28	**Map & Lot Number: 92-29**
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 & Lot Number: 93-30	**Map & Lot Number:**
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 & Lot Number: 92-33	Map & Lot Number: 92-34
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 226 HOLIDAY DRIVE, SUITE 20 WHITE RIVER JUNCTION, VT 05001
Map & Lot Number: 92-36	**Map & Lot Number: 92-37**
MAP 92 LOT 36 TWIN PINES HOUSING TRUST 226 HOLIDAY DRIVE, SUITE 20 WHITE RIVER JUNCTION, VT 05001	MAP 92 LOT 37 WALID NASRALLAH, T'EE NASRALLAHS ANDENWOOD TR. 11009 ANDENWOOD DRIVE AUSTIN, TX 78726
Map & Lot Number: 92-38	**Map & Lot Number: 92-39**
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 & Lot Number: 92-40	**Map & Lot Number: 92-41**
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 & Lot Number: 92-42	**Map & Lot Number: 92-43**
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 & Lot Number: 92-78	**Map & Lot Number: 78-2**
MAP 92 LOT 78 EXCUSUITE LLC 31 ELM ST LEBANON, NH 03766	MAP 78 LOT 2 EMERSON PLACE APTMS LLC 150 PRESIDENTIAL WAY STE 220 WOBURN, MA 01108
Map & Lot Number: 78-4	**Map & Lot Number: 78-5**
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 & Lot Number: 78-39	Map & Lot Number:
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
Map & Lot Number:	**Map & Lot Number:**
TFMORAN, INC. C/O NICHOLAS GOLON, PE & MICHAEL DAHLBERG, LLS 48 CONSTITUTION DRIVE BEDFORD, NH 03301	TOWN OF HANOVER PO BOX 483 41 SOUTH MAIN STREET HANOVER, NH 03755
Map & Lot Number:	**Map & Lot Number:**
TOWN OF PLAINFIELD 110 MAIN STREET PLAINFIELD, NH 03781	UPPER VALLEY LAKE SUNAPEE REGIONAL PLANNING COMMISSION 10 WATER STREET SUITE 225 LEBANON, NH 03766
Map & Lot Number:	**Map & Lot Number:**
TOWN OF ENFIELD 23 MAIN STREET ENFIELD, NH 03748	
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**
Map & Lot Number:	**Map & Lot Number:**

FEE SCHEDULE
LEBANON PLANNING BOARD
Adopted January 24, 2022

LOT LINE ADJUSTMENT (Boundary Line Adjustment)

		TOTALS
FILING FEE	$25.00	$25.00
ADVERTISING FEE	$100	$100
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE		$

MINOR SUBDIVISION

		TOTALS
FILING FEE	$150.00	$150.00
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

****Engineering Review fees may also be required. See note on page 2.**

PRELIMINARY REVIEW OF A MAJOR SUBDIVISION

		TOTALS
FILING FEE	$200.00	$200.00
NUMBER OF LOTS* _____	$30.00 per lot*	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$

****Or units when the subdivision does not create individual lots.***

****Engineering Review fees will also be required. See note on page 2.**

FINAL REVIEW OF A MAJOR SUBDIVISION

		TOTALS
FILING FEE	$500.00	$500.00
FIRST FIVE (5) LOTS*	$75.00 per lot*	
NUMBER OF LOTS 6+*	$150.00 per lot*	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE TIME OF FILING		$

****Or units when the subdivision does not create individual lots.***

****Engineering Review fees will also be required. See note on page 2.**

SITE PLAN REVIEW

		TOTALS
FILING FEE	$250.00	$250.00
SQUARE FOOTAGE 76,064 GFA	$75.00 per 1,000 sq. ft. (gross floor area)	$5,704.80
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note on page 2)**	$5.00 + Current USPS rate per certified notice (see below) $5.54 X $121.88 notices	$5.00 $ $121.88 (abutter certifieds)

Form last revised on 07/15/2024 Postage increase

SITE PLAN REVIEW

TOTAL DUE AT TIME OF FILING		$ $6,181.68
****Engineering Review fees will also be required. See note on page 2.**		

SITE PLAN REVIEW AMENDMENT (WITH STRUCTURAL CHANGES)

		TOTALS
FILING FEE	$250.00	$250.00
SQUARE FOOTAGE	$75.00 per 1,000 sq. ft. (gross floor area)	
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$
****Engineering Review fees may also be required. See note below.**		

OTHER

-SITE PLAN REVIEW AMENDMENT (WITH NO STRUCTURAL CHANGES)
-EXTENSION REQUESTS
-CONDITIONAL USE PERMITS

		TOTALS
FILING FEE	$250.00	$250.00
ADVERTISING FEE	$100.00	$100.00
NOTIFICATION FEE **(see note below)**	$5.00 + Current USPS rate per certified notice (see below) X_____notices	$5.00 $_____(abutter certifieds)
TOTAL DUE AT TIME OF FILING		$
****Engineering Review fees may also be required. See note below.**		

MINOR SITE PLAN REVIEW

		TOTALS
FILING FEE	$150.00	$150.00
NOTIFICATION FEE **(see note below)**	Current USPS rate per certified notice (see below) X_____notices	$_____(abutter certifieds)
TOTAL DUE		$

ENGINEERING REVIEW FEES:

After an application to the Planning Board is submitted and the filing fees identified above have been paid, the Planning & Development Department will determine the scope of required engineering review and will obtain an estimated cost from the reviewing engineer. A cost estimate of the review fees will usually be generated within two (2) – three (3) business days. Once conveyed to the applicant, the estimated review fees shall be paid by the applicant within five (5) business days, and an escrow account shall be established by the Planning & Development Department. No plans will be reviewed unless and until the review fee estimate is paid, if required.

Please note that escrow fees are only an estimate of what services will cost and actual costs of review may be less or more than the amount initially estimated. Any unused portion of the escrow will be returned to the applicant at the end of the approval process if such a surplus remains. Additionally, in the event the escrow amount does not cover the full cost of services the Applicant shall pay any remaining costs as a condition of approval. See also Section 4.7 of the Site Plan Review Regulations and Section 7.7 of the Subdivision Regulations.

NOTIFICTION FEE: CURRENT FEE as of January 2024 is $5.54 per certified notice

THE CERTIFIED NOTIFICATION FEE IN ALL SECTIONS ABOVE INCLUDES THE FOLLOWING: ALL ABUTTERS, THE APPLICANT, PROPERTY OWNER, HOLDER OF CONSERVATION, PRESERVATION, OR AGRICULTURAL PRESERVATION RESTRICTION(S); AND EVERY ENGINEER, ARCHITECT, LAND SURVEYOR OR SOIL SCIENTIST WHOSE PROFESSIONAL SEAL APPEARS ON ANY PLAT SUBMITTED TO THE BOARD AND ANY OTHER PERSONS REQUIRED BY RSA 676:4, I(d).

GROSS SQUARE FOOTAGE (GSF)	
FLOOR	AREA (GSF)
1	18,986
2	19,026
3	19,026
4	19,026

UNIT MATRIX			
UNIT TYPE	COUNT	AVERAGE AREA (GSF)	RATIO
1 BD	41	695	51%
2 BD	18	905	23%
2 BD L/W	9	887	11%
3 BD	8	1,088	10%
ST	4	498	5%
TOTALS	80		

SITE DATA

1. 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 = 30% X 80 UNITS = 24 SPACES
   SHORT TERM = 15% 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 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 "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 CATCH BASINS 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 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.
12. THE CONTRACTOR IS 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 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. 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.

SITE DEVELOPMENT PLANS

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

SCALE: 1"=30' **AUGUST 12, 2024**

16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER OF RECORD, NICHOLAS GOLON, PE, SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER OF RECORD, SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. 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-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD, NICHOLAS GOLON, PE.
20. FIRE TRUCK TURN AROUND TO BE MAINTAINED YEAR ROUND. FUTURE STRUCTRES ARE PROHIBITED IN THE FIRE TRUCK TURN AROUND.
21. THE PLAYGROUND AREA ON THE NORTHERN RAIL TRAIL PROPERTY IS SHOWN FOR COORDINATION PURPOSES. THE PERMITTING AND CONSTURCITON OF THE PLAYGROUND WILL BE COMPLETED VIA A SEPERATE APPLICATION. THE APPLICANT IS WORKING IN PARTNERSHIP WITH THE CITY FOR APPROVALS.

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM
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

FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	SURFACE CONDITIONS PLAN	SCP-01

LANDSCAPE & MAINT. REQUIREMENTS:

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 IN THE EVENT OF A WILDFIRE. MAINTENANCE MEANS/MEASURES SHALL MEET THE REQUIREMENTS OF NFPA 1144, SECTION 6, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. 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, PRESCRIBED BURNING BY QUALIFIED PERSONNEL, MOWING, PRUNING, REMOVING, SUBSTITUTION, MULCHING, CONVERTING TO COMPOST, AND GRAZING.
2. LANDSCAPED PLANTINGS SHALL POSSESS CHARACTERISTICS TO REDUCE MAINTENANCE SUCH AS DROUGHT RESISTANCE, PEST RESISTANCE, NON-INVASIVE, SLOW GROWING, NON-RESISTANT SPECIES. PLANTINGS WITHIN THE DEFENSIBLE ZONE SHALL BE LOW FLAMMABILITY SPECIES WITH 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 OR LOOSE BRANCHING HABIT AND EASY MAINTENANCE/PRUNING.
3. 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.
4. VEGETATION UNDER TREES WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA SHALL BE MAINTAINED AT A HEIGHT THAT WILL PRECLUDED GROUND FIRE FROM SPREADING IN THE TREE CROWN.
5. TREE CROWNS WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA SHALL BE SPACED TO PREVENT STRUCTURE IGNITION FROM RADIANT HEAT. RECOMMENDED MINIMUM TREE CROWN SPACING OF 18 FT.
6. THE FACILITIES OWNER AND/OR FACILITY MAINTENANCE STAFF SHALL BE RESPONSIBLE INSPECTING THE CONDITION OF VEGETATION, WITHIN THE DEFENSIBLE ZONE AND LANDSCAPED AREA, TWICE YEARLY (AS A MINIMUM) TO IDENTIFY DEAD AND DOWNED MATERIALS 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.

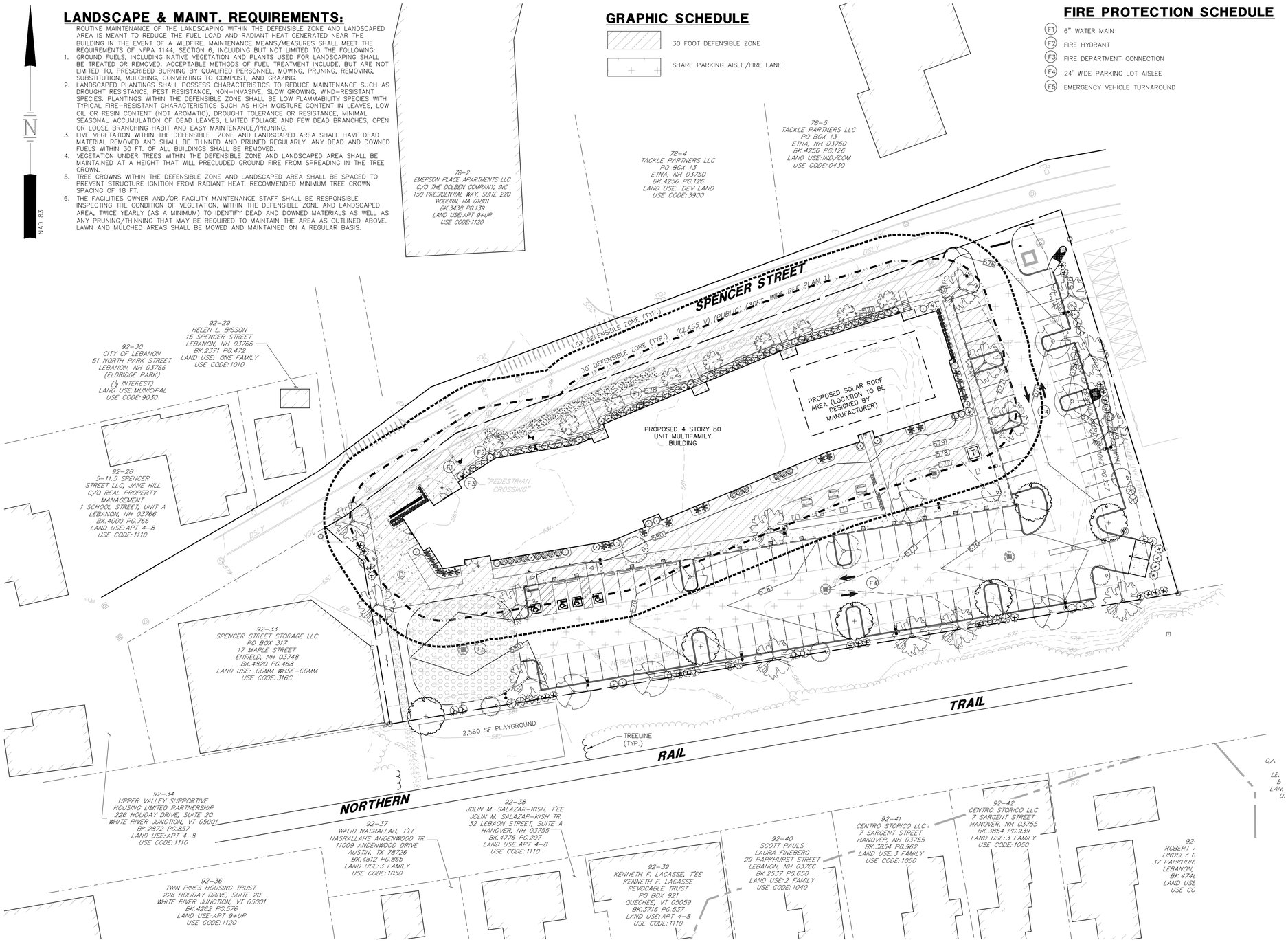
GRAPHIC SCHEDULE

30 FOOT DEFENSIBLE ZONE

SHARE PARKING AISLE/FIRE LANE

FIRE PROTECTION SCHEDULE

- 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:

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 DELIVERY 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 FINAL OCCUPANCY 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 ALL TIMES. IN AREAS WHERE GROUND SURFACES ARE SOFT OR LIKELY 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 OR GASES SHALL BE STORED, HANDLED, 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 NFPA58, LIQUEFIED PETROLEUM GAS CODE.
7. TEMPORARY HEATING DEVICES SHALL BE AN 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 NFPA51B, 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:120-B:C SHALL BE WITHIN A TRAVEL DISTANCE OF 75 FT. OR LESS TO ANY POINT OF A BUILDING UNDER CONSTRUCTION. PERSONNEL NORMALLY ON THE CONSTRUCTION SITE SHALL BE INSTRUCTED IN THE USE OF THE FIRE EXTINGUISHERS PROVIDED.

CONSTRUCTION REQUIREMENTS:

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 ASSEMBLIES SHALL BE ONLY LISTED ROOF COVERING, TESTED AND RATED IN ACCORDANCE WITH ASTM 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 SPACES 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 $\frac{3}{8}$" NOMINAL SHEATHING OR NONCOMBUSTIBLE MATERIALS;
1.7. VENTS SHALL BE SCREENED WITH A CORROSION RESISTANT, NONCUMBUSTIBLE 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. NO ATTIC VENTILATION OPENINGS SHALL BE PERMITTED IN SOFFITS, IN EAVE OVERHANGS, BETWEEN RAFTERS AT EAVES, OR IN 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 FIREBRANDS.
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, AND GRILLS 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. PROPANE 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.

GENERAL NOTES/REQUIREMENTS:

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 DEMONSTRATE BY ACTUAL TEST THAT THE CAPACITY OF THE WATER SUPPLY SYSTEM WILL MEET THE FIRE PROTECTION DESIGN REQUIREMENTS. LEBANON FIRE DEPARTMENT SHALL BE ON SITE TO WITNESS AND APPROVE THE RESULTS.

SITE DEVELOPMENT PLANS

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

SCALE: 1"=30' **AUGUST 12, 2024**

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

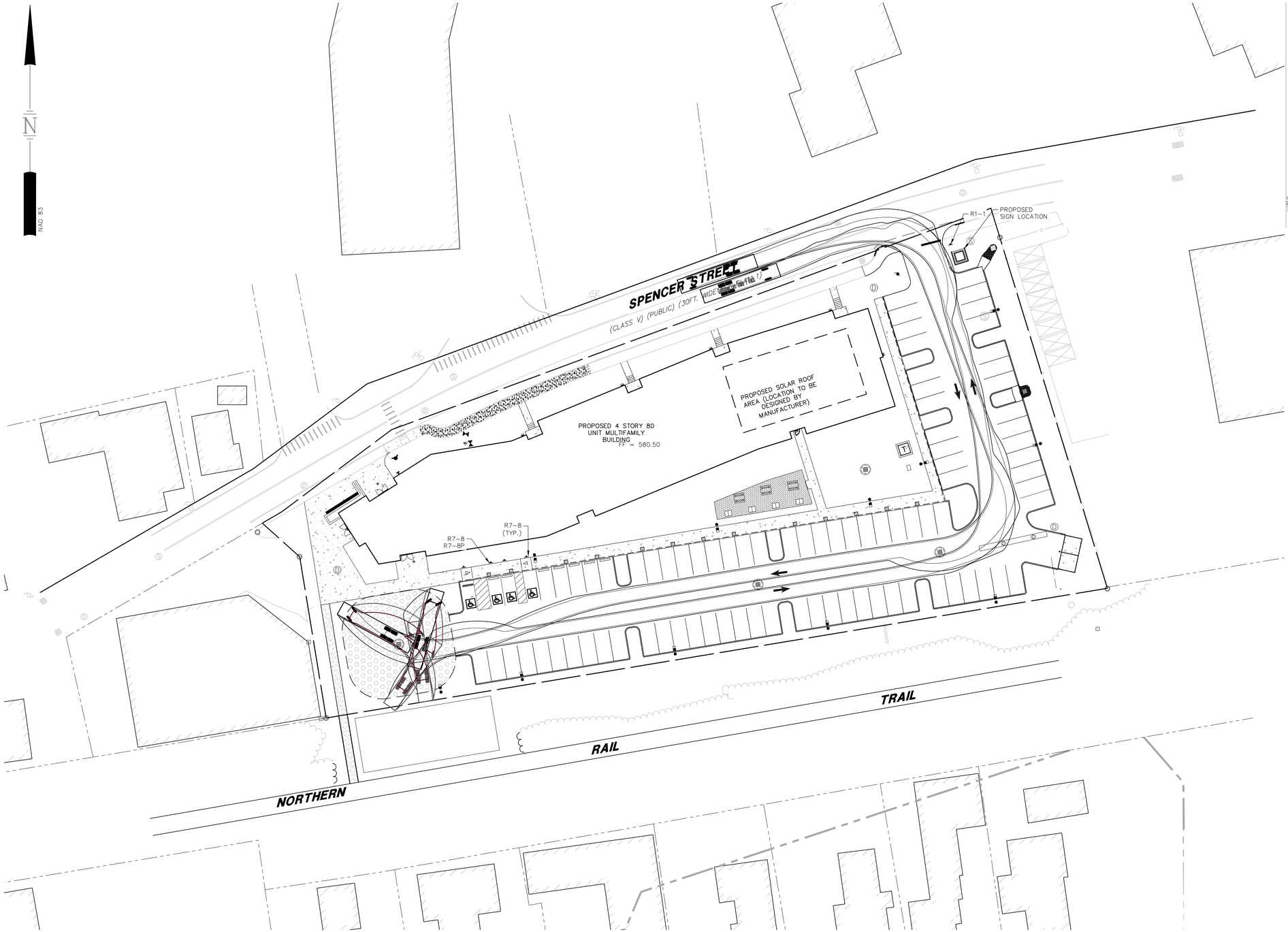
HORIZONTAL SCALE 1"=30'
30 15 0 30

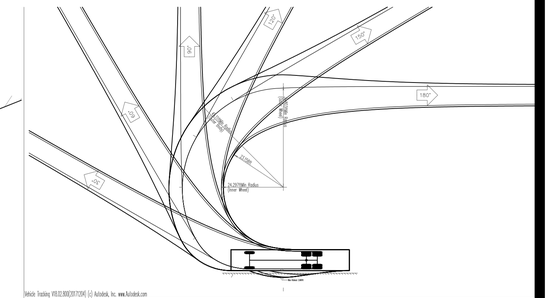
REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

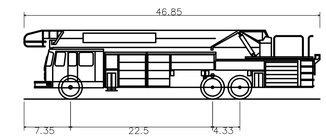
TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	W-01 – WUD	WUD-1







Fire Tower 1 Truck

Overall Length	46.850ft
Overall Width	8.250ft
Overall Body Height	10.894ft
Min Body Ground Clearance	1.325ft
Track Width	6.910ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

TURNING TEMPLATE 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**

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DIG SAFE NH
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM®
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
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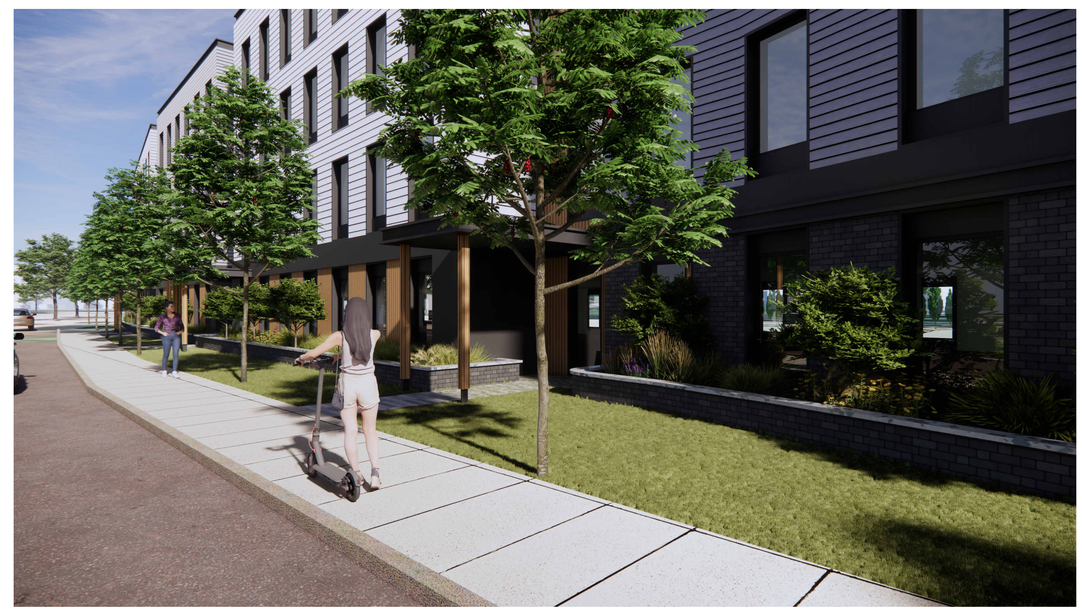
FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	T-01 – TURNING	T-01

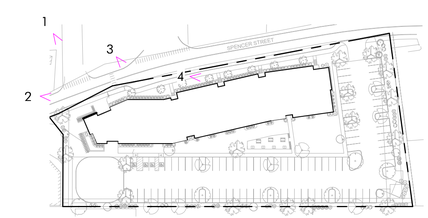
PERSPECTIVE 1

PERSPECTIVE 2

PERSPECTIVE 3



PERSPECTIVE 4



ARCHITECT
EMBARC
580 HARRISON AVE, SUITE 2W
BOSTON, MA 02118
O: 617.765.8000
www.embarcdesign.com

OWNER

BROOKLINE OPPORTUNITIES
PO BOX 847 HOLLIS NH, 03049

CONSULTANTS

CIVIL ENGINEER
TF MORAN, INC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
604-472-4488

MUSE APARTMENTS
20 SPENCER STREET
LEBANON, NH

SITE DEVELOPMENT PLANS

REVISIONS

MARK	ISSUE	DATE

LICENSED ARCHITECT
Dan Dagnan Brown
No. 04331
THE STATE OF NEW HAMPSHIRE

DRAWING INFORMATION

ISSUE: SITE DEVELOPMENT PLANS
DATE:
PROJECT #: 23000
SCALE: 1" = 100'-0"

DRAWING TITLE
ARCHITECTURAL RENDERINGS

DRAWING NUMBER
A900

copyright: EMBARC INC.

C:\Local Revit\23064_20 Spencer Street_DRiggsPKU3L6.rvt
8/9/2024 8:26:18 PM

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, 5th Floor
Lebanon, NH 03766

From: Robert E. Duval, P.E.

Re: Proposed Workforce Housing
20 Spencer Street, Lebanon NH
TFM Project No. 96202

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 (11th 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

Proposed Affordable Housing: 80 Unit (LUC 223)	In	Out	Total
PEAK HOUR TRIPS			
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
DAILY TRIPS			
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/ Eq	Trip Ends	Directional Split		Directional Distribution	
	X	Rate	Used		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.

MUSE APARTMENTS

20 SPENCER STREET
LEBANON, GRAFTON COUNTY, NH 03766
LEBANON DOWNTOWN DISTRICT

GENERAL INFORMATION

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
580 HARRISON AVE SUITE 2W
BOSTON, MA 02118
617-765-8000
DAN RIGGS, AIA

CIVIL ENGINEER
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
NICHOLAS GOLAN, PE

SURVEYOR
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
MICHAEL DAHLBERG, PLS

LANDSCAPE ARCHITECT
TFMORAN, INC.
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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
226 HOLIDAY DRIVE, SUITE 20
WHITE RIVER JUNCTION, VT 05001

MAP 92 LOT 36
TWIN PINES HOUSING TRUST
226 HOLIDAY DRIVE, SUITE 20
WHITE RIVER JUNCTION, VT 05001

MAP 92 LOT 37
WALID NASRALLAH, T'EE
NASRALLAHS 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
EXCUSUITE LLC
31 ELM ST
LEBANON, NH 03766

MAP 78 LOT 2
EMERSON PLACE APTMS LLC
150 PRESIDENTIAL WAY STE 220
WOBURN, 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

WAIVERS

THE FOLLOWING WAIVERS FROM THE CITY OF LEBANON SITE PLAN REVIEW REGULATIONS ARE REQUESTED FROM THE PLANNING BOARD:

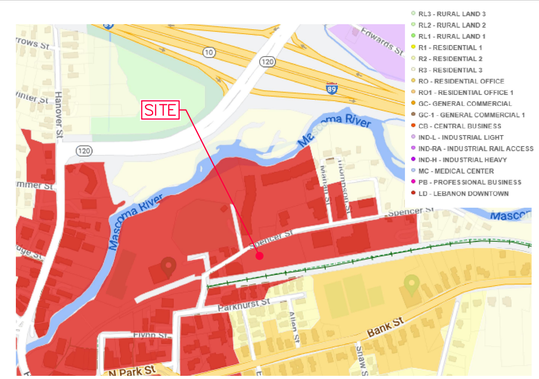
1. SECTION 5.1.G(2)
   TO PERMIT A TRIP GENERATION MEMO VS. A TRAFFIC IMPACT STUDY
2. SECTION 6.2.B.1.A.
   5' MIN. LANDSCAPE AREA WHERE 10' REQUIRED
3. SECTION 6.2.B.4
   TO PERMIT TREES PLANTED AT THE PROPERTY LINE WHERE 8' REQUIRED
4. SECTION 6.2.B.6
   TO PERMIT 7' ADDITIONAL PERIMETER WIDTH ON WEST 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 DRAINGE TEST PITS DUE TO HISTORIC SOILS AND GROUNDWATER DATA
7. SECTION 6.6.G.
   TO PERMIT AN ALTERNATIVE STORMWATER DESIGN CONSISTING OF PRETREATMENT ONLY

VICINITY PLAN

HORIZONTAL SCALE 1"=500'
500 250 0 500

N

ZONING PLAN



HORIZONTAL SCALE 1"=500'
500 250 0 500

TABLE OF CONTENTS

SHEET	SHEET TITLE
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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
REFERENCE PLANS BY ASSOCIATED PROFESSIONALS	
L-01	LIGHTING PLAN
A100	BUILDING FLOOR PLAN (BY EMBARC DESIGN)
A200	ARCHITECTURAL ELEVATIONS (BY EMBARC DESIGN)

PERMITS/APPROVALS

	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 ENOI CGP & 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)

EXISITNG	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 DOWTOWN DISTRICT (LD) & FLOODPLAIN OVERLAY DISTRICT
TAX MAP & LOT NUMBERS	92-31
AREA OF LOT	1.92 AC
BUILDING COVERAGE	23% OR 18,986 SF

DIMENSIONAL REQUIREMENTS

	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*	10 FT	83.3 FT
*EXCEPT AS REQUIRED PER SECTION 307.7		
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	55 FT	46.6 FT
STRUCTURE STORIES	N/A	4 STORIES
BUILDING COVERAGE	100%	23%

VEHICLE AND BIKE PARKING

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

EXISITNG = 0
PROVIDED = 87 SPACES ONSITE

BICYCLE PARKING CALCULATIONS:
LONG TERM = 30% X 80 UNITS = 24 SPACES
SHORT TERM = 15% X 80 UNITS = 12 SPACES

EXISITNG: 0
PROVIDED:
LONG TERM (INTERIOR) = 80 SPACES
SHORT TERM (EXTERIOR) = 12 SPACES

LOADING SPACES
EXISTING: 0
PROVIDED: 0

REQUIRED EV CHARGING RATIO:
EVSE 5% = 5 SPACES
EV CAPABLE 20% = 13 SPACES
EV READY SPACES 65% = 39 SPACES
TOTAL = 57

PROVIDED:
EVSE = 6 SPACES (2 ADA)
EV CAPABLE SPACES = 18 SPACES
EV READY SPACES = 33 SPACES
TOTAL = 57

OWNER'S SIGNATURE

THE PROPERTY WILL BE DEVELOPED IN ACCORDANCE WITH THIS PLAN AND THE ORDINANCES OF THE CITY OF LEBANON, NEW HAMPSHIRE.

OWNER OR AUTHORIZED AGENT — *DATE* 8/12/2024

APPROVED BY THE CITY OF LEBANON PLANNING BOARD

ON _____

BOARD MEMBER _____ *AND*

BOARD MEMBER _____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
8/26/24

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

SITE DEVELOPMENT PLANS

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**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JED	FB	–	C-01
96202.01	CK	NG	CADFILE	96202-01 COVER-DETAILS	

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

LEGEND

PROPOSED	
	PROPERTY LINE
	ZONING LINE
	EASEMENT
	SETBACK (STRUCTURE)
EOP	EDGE OF PAVEMENT
VGC	VERTICAL GRANITE CURB
ICC	INTEGRATED CONCRETE CURB
BCC	BITUMINOUS ASPHALT CURB
	SAWCUT
	BUILDING
	BUILDING ROOF OVERHANG
	BUILDING FOUNDATION
	BUILDING ENTRANCE
	OVERHEAD DOOR
	TREE LINE
SS	SILT SOCK
	SOIL BOUNDARY
	CONTOUR
TC100.50 BC100.00 OR 100.00	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
S	SEWER LINE
W	WATER LINE
G	GAS LINE
OHE	OVERHEAD UTILITY LINE
UGE	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
TP-#	TEST PIT LOCATION
IT-#	INFILTRATION TEST LOCATION

GENERAL NOTES

1. 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-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
2. 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.
3. 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.
4. ALL IN PAVEMENT MANHOLES SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
5. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
6. 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.
7. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
8. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
9. 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.
10. REFER TO THE CITY STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
11. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND PONDS PRIOR TO DIRECTING FLOW TO THEM.
12. 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.
13. 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.
14. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
15. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
16. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
17. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
18. 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.
19. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
20. 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.
21. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
22. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
23. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
24. 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.
25. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND CITY OF NASHUA CONSTRUCTION STANDARDS, LATEST ADDITION.
    B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    D. 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.
    E. 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.
    F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    G. 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.
    H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    I. 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.
    J. 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 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 US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    K. 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.
    L. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    M. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE OWNER.
    N. 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.
    O. 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

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. 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.
3. 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.
4. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
5. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
6. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
7. 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.
8. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
9. 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.
10. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 7" REVEAL UNLESS OTHERWISE NOTED.
11. 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".
12. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
13. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
14. 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.
15. 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.
16. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
17. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
18. 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.

19. 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

1. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
2. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
3. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
4. ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
5. CONTRACTOR TO LIMIT AREA OF DISTURBANCE TO NO MORE THAN 5 ACRES AT ONE TIME DURING CONSTRUCTION.
6. CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK.
7. 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.
8. THE CONTRACTOR SHALL REQUEST A PRECONSTRUCTION MEETING WITH THE CITY TO DISCUSS SITE INSPECTIONS, SCHEDULES, SPECIAL CONDITIONS, ETC.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. 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.
3. 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.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. 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.
16. 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.
17. 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

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

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**

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	96202-01 COVER-DETAILS	C-02

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

LANDSCAPE 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 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, 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.

GUARANTEE

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE YEAR, BEGINNING AT THE START OF THE MAINTENANCE PERIOD.

SITE AND SOIL PREPARATION

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 FRIABLE 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 NO. 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.

LANDSCAPE MAINTENANCE

LAWN

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. ROLL, REGRADE, 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 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 ONE INCH (25 mm) PER WEEK.

4. MOW LAWN AS SOON AS TOP 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 INITAL 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 ½ INCH (13 mm) HIGH OR LESS.
   B. MOW GRASS ½ TO 1 INCH (13 TO 25 mm) HIGH OR LESS.
   C. MOW GRASS 1 TO 2 INCHES (25 TO 50 mm) HIGH OR LESS.
   D. MOW GRASS 1-1/2 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 ACTUAL NITROGEN OF AT LEAST 1 lb/1,000 SF (0.45 kg/92.9 SM) TO LAWN AREA.

MEADOW

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. WATERING: 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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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TREES AND SHRUBS:

1. PRUNING SHOULD BE STARTED 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. MAINTAINENCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.

LANDSCAPE SPECIFICATIONS

SEEDING

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, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. 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)
   100% ANNUAL RYE

PLANTING

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 POCKETS 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 ADJACENT 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.

CONSTRUCTION SEQUENCE NOTES

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 ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 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 BETHANN MCCARTHY AT: BETHANN.M.MCARTHY@DES.NH.GOV).
14. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

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 NHDES 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.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER 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 MUST 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.

EROSION CONTROL NOTES

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 ALL SLOPES HAVE A VEGETATIVE 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 NEW ENGLAND WETLAND PLANTS, INC. OR APPROVED 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
   AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED 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.

OVERWINTER STABILIZATION

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.

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

SITE DEVELOPMENT PLANS

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**

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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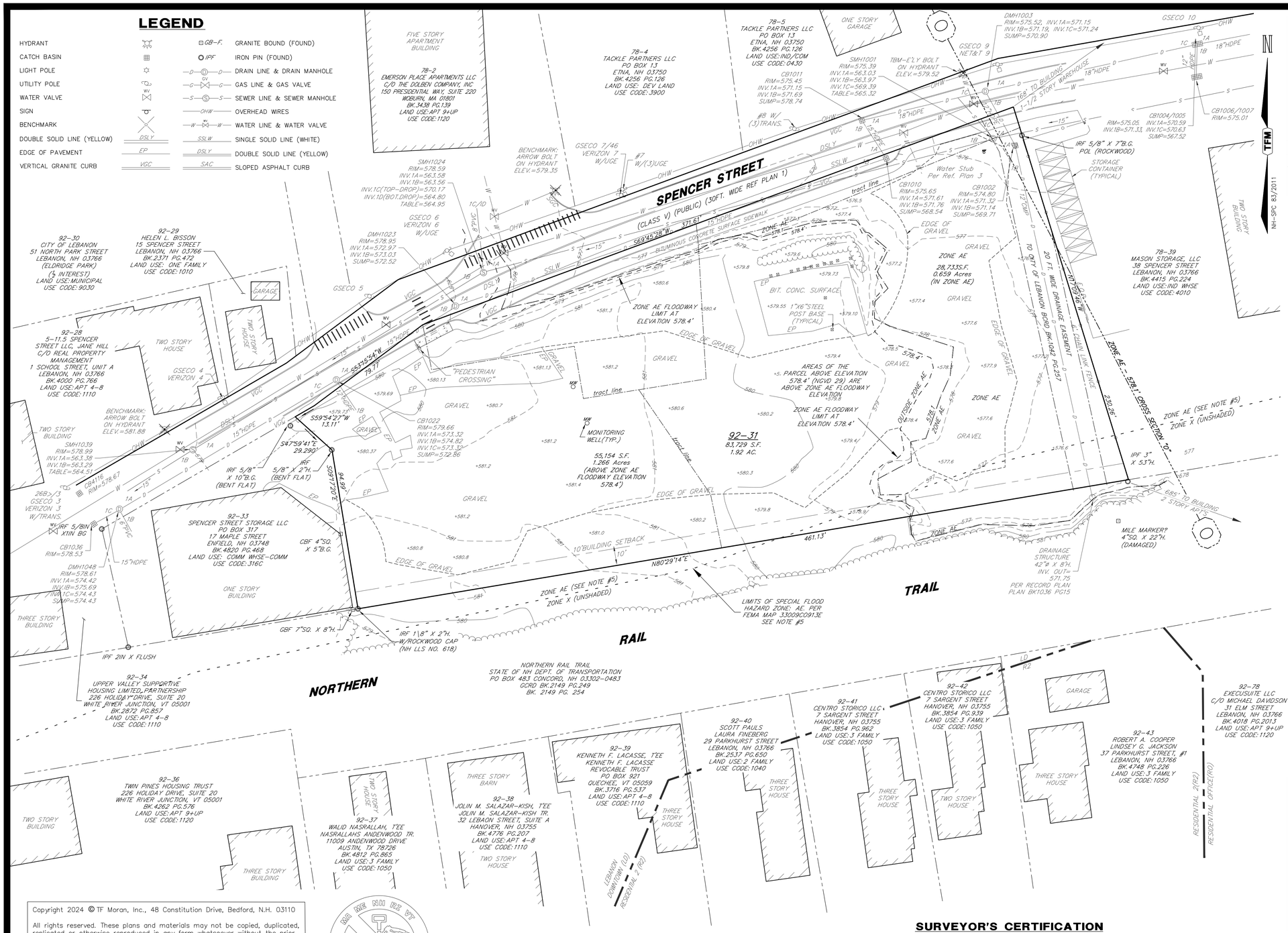
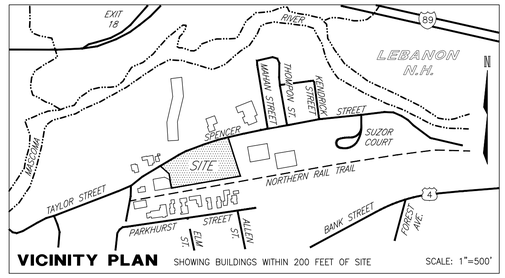
www.tfmoran.com

FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	96202-01 COVER-DETAILS	C-03





VICINITY PLAN SHOWING BUILDINGS WITHIN 200 FEET OF SITE SCALE: 1"=500'

REFERENCE PLANS

1. 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.
2. 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.
3. 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

1. 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)
2. 92-31 INDICATES TAX MAP AND LOT NUMBER.
3. 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.
4. 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.
5. 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 "D" 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.
6. HORIZONTAL DATUM: NAD83(2011). VERTICAL DATUM: NGVD29. BENCHMARK USED: STATION E 49 X 1978 (253-430) (NGS PID OD1079) VIA DIFFERENTIAL LEVELING TECHNIQUES. BENCHMARK SET: AS SHOWN
7. 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.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TF 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.
9. 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.

Graphic Scale

30' 15' 0' 30' 60' 90' 120'

1" = 30'

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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This plan is not effective unless signed by a duly authorized officer of TF Moran, Inc.

REV.	DATE	DESCRIPTION	DR	CK

811 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-III)

LICENSED LAND SURVEYOR — AUGUST 09, 2024 DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR — SIGNATURE

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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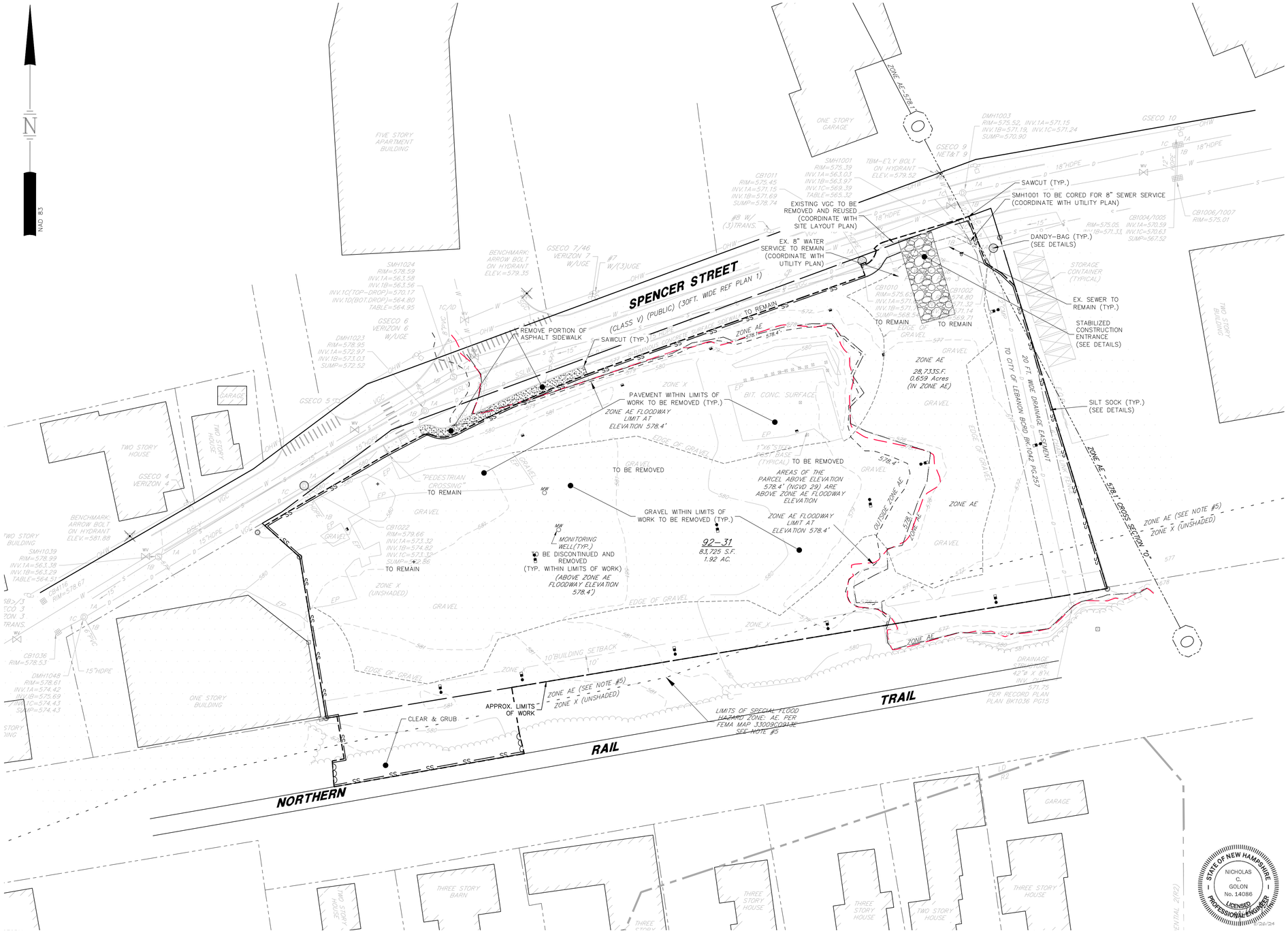
FILE	96202.00	DR	TNB	FB	2227	SHEET 1 OF 1
		CK	MRD	CADFILE	96202-00 Survey	

Aug 09, 2024 - 1:43pm
F:\TFM Projects\96202 Spencer St - Lebanon, NH\Carlson Survey\Dwgs\96202-00 Survey.dwg



NOTES

1. SEE SITE PREPARATION AND CONSTRUCTION SEQUENCE NOTES ON SHEET C-02.
2. THIS PARCEL IS SUBJECT TO GROUNDWATER MANAGEMENT PERMIT NO. 198806030-L-001. ONGOING MONTIROING AND REPORTING SHALL CONTINUE ACCORDING TO THE PERMIT IN CONJUCTION 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

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

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**

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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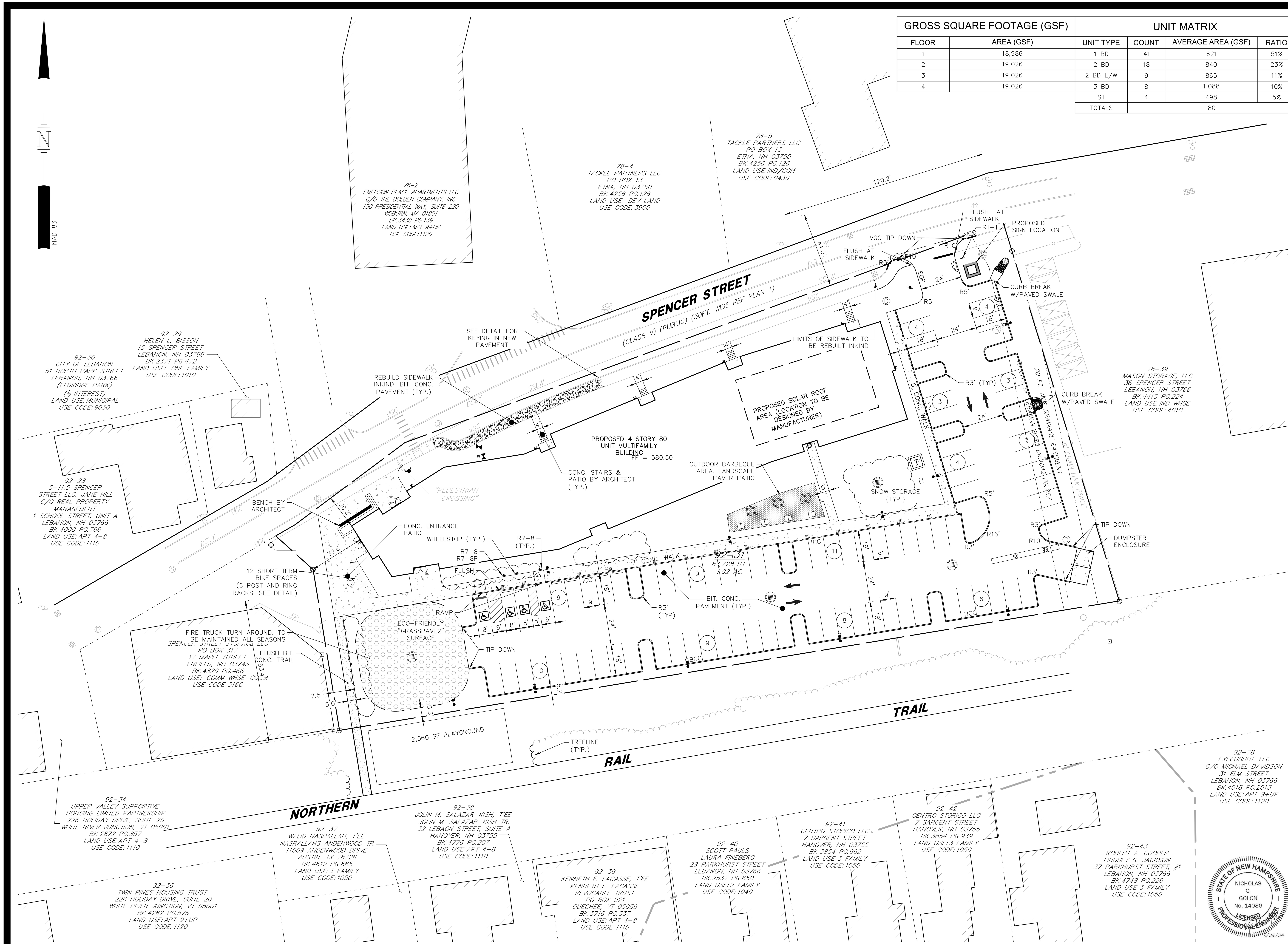
FILE	DR	JED	FB	–	FIG.
96202.01	CK	NG	CADFILE	C-04 SITE PREP	C-04

GROSS SQUARE FOOTAGE (GSF)	
FLOOR	AREA (GSF)
1	18,986
2	19,026
3	19,026
4	19,026

UNIT MATRIX			
UNIT TYPE	COUNT	AVERAGE AREA (GSF)	RATIO
1 BD	41	621	51%
2 BD	18	840	23%
2 BD L/W	9	865	11%
3 BD	8	1,088	10%
ST	4	498	5%
TOTALS	80		



SITE DATA

1. 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 = 30% X 80 UNITS = 24 SPACES
   SHORT TERM = 15% 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

5. 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 "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.
6. 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 CATCH BASINS CLEAR.
7. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
8. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
9. 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.
10. THE CONTRACTOR IS 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 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.
11. 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.
12. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
13. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY OF LEBANON ZONING ORDINANCE AND SITE PLAN REGULATIONS.
14. 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.
15. ALL WORK IS TO CONFORM TO CITY OF LEBANON, DIVISION OF PUBLIC WORKS STANDARD SPECIFICATIONS.
16. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER OF RECORD, NICHOLAS GOLON, PE, SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
17. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER OF RECORD, SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
18. 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-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
19. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD, NICHOLAS GOLON, PE.
20. FIRE TRUCK TURN AROUND TO BE MAINTAINED YEAR ROUND. FUTURE STRUCTRES ARE PROHIBITED IN THE FIRE TRUCK TURN AROUND.
21. THE PLAYGROUND AREA ON THE NORTHERN RAIL TRAIL PROPERTY IS SHOWN FOR COORDINATION PURPOSES. THE PERMITTING AND CONSTURCITON OF THE PLAYGROUND WILL BE COMPLETED VIA A SEPERATE APPLICATION. THE APPLICANT IS WORKING IN PARTNERSHIP WITH THE CITY FOR APPROVALS.

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DIG SAFE — MA ME NH RI VT — CALL 811 TOLL FREE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 8/26/24

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

SITE LAYOUT 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**

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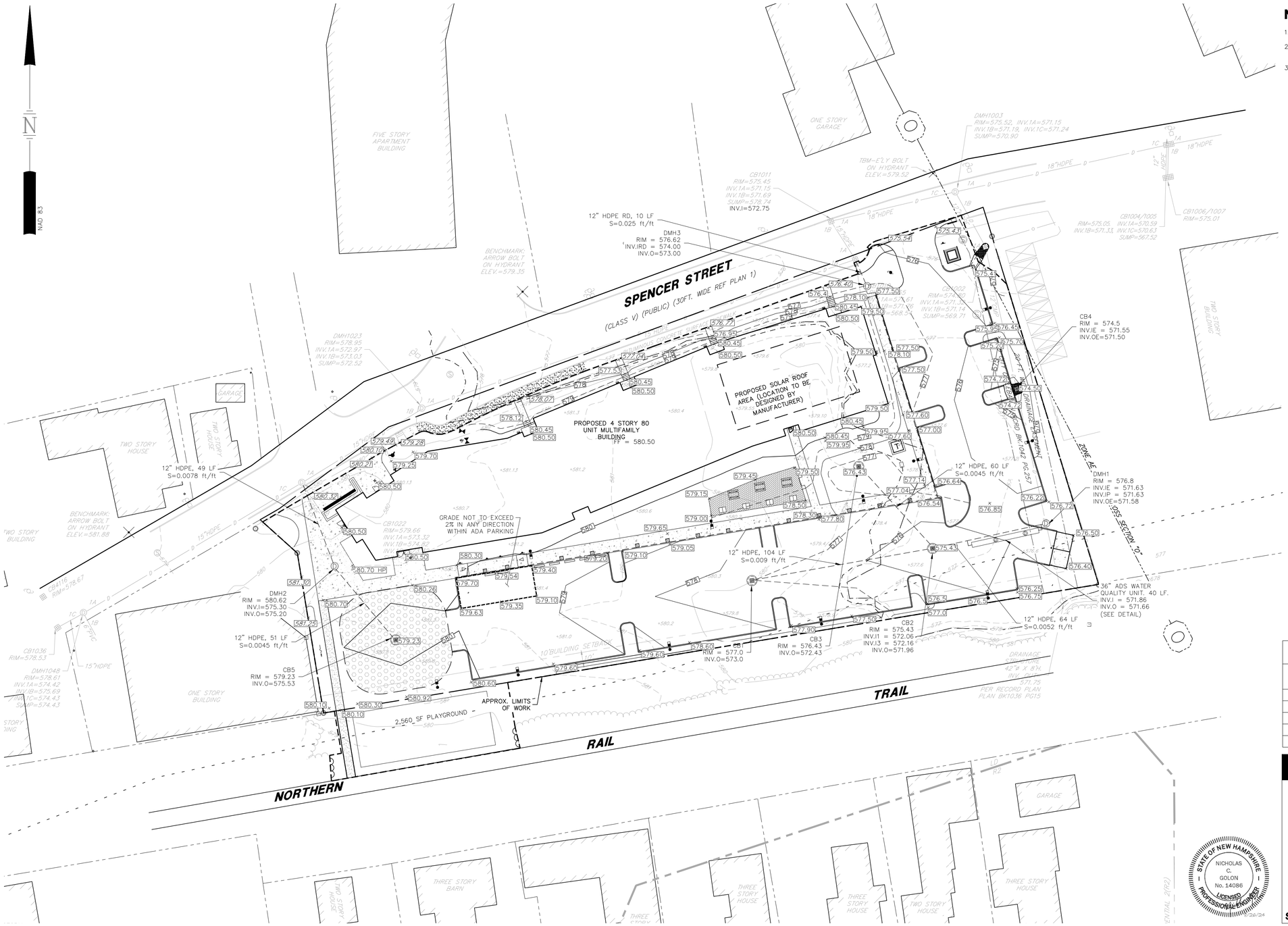
FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	C-05 – SITE LAYOUT	C-05



NOTES

1. SEE GRADING NOTES ON SHEET C–02.
2. CONTRCTOR TO REPORT TO ENGINEER ON CONDITION OF 12" CMP PIPE WITHIN THE CITY EASMENT. IF THE CONDITION OF THE CMP PIPE IS POOR, APPLICANT TO REPLACE PIPE WITH 12" HDPE.
3. THE APPLICANT SHALL BE RESPOSIBLE FOR ANY REPAIRS TO THE SITE AS A RESULT OF FUTURE WORK WITHIN THE CITY DRAINAGE EASMENT.

Flood Plain Area Analysis

Contour Elevation (ft)	Pre Development (sf)	Post Development (sf)	Delta (sf)
575	52.2	394.0	–341.8
576	2165.0	7913.3	–5748.3
577	15327.2	23115.5	–7788.4
578	26113.7	31328.9	–5215.2
578.4	28733.2	33949.1	–5215.8

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

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 8/26/24

SCALE: 1"=30' **AUGUST 12, 2024**

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HORIZONTAL SCALE 1"=20'
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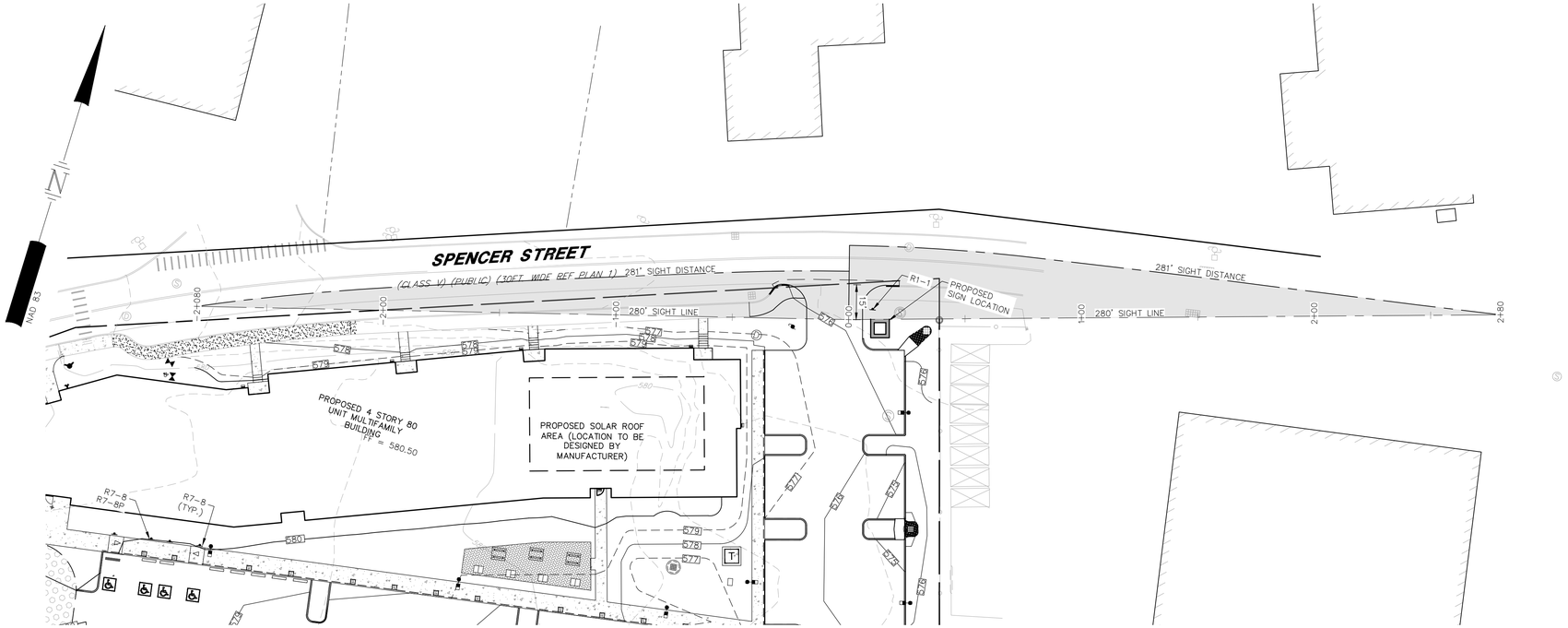
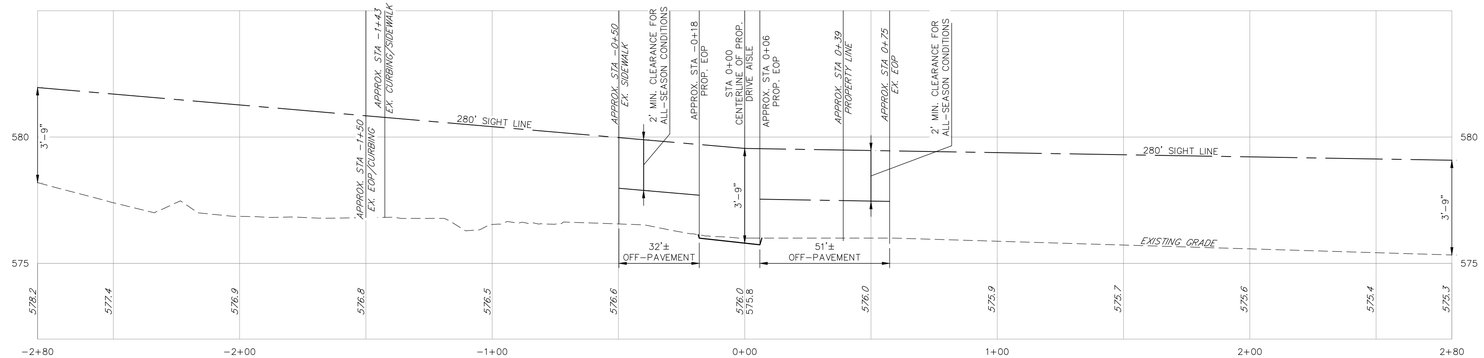
96202.01	CK	NG	CADFILE	C–06 – GRADING AND DRAINAGE	C–06



SIGHT DISTANCE PLAN

SCALE: 1"=30'



SIGHT DISTANCE PROFILE

SCALE: 1"=30' H/1"=3' V

NOTES

1. NO POSTED SPEED LIMIT ON SPENCER STREET*.
2. 25 MPH AASHTO ALL-SEASON SIGHT DISTANCE USED FOR ANALYSIS.
3. ELEVATIONAL DATA OUTSIDE OF TFMORAN, INC. SURVEY FROM GOOGLE EARTH. *25 MPH USED PER CITY ORDINANCE #2020-04 (CITY CODE CHAPTER 168)

AASHTO SIGHT DISTANCE CRITERIA FOR 25 MPH DESIGN SPEED

CASE	STOPPING SIGHT DISTANCE	INTERSECTION SIGHT DISTANCE
B1	155	280
B2	155	240
B3	155	240

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

SIGHT DISTANCE 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**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

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DIG SAFE
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HORIZONTAL SCALE 1"=30'
30 15 0 30
3 0 3
VERTICAL SCALE 1"=3'

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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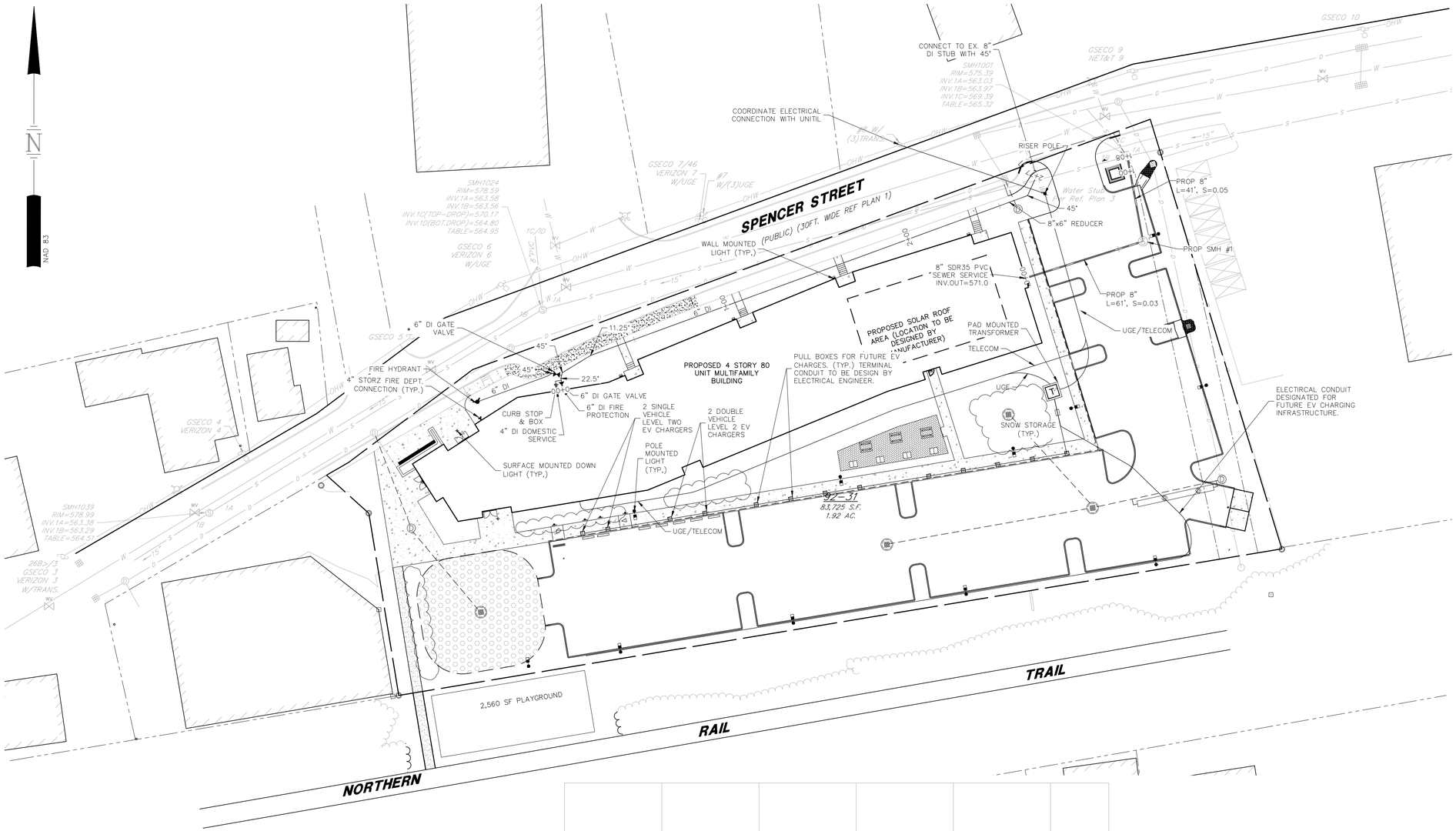
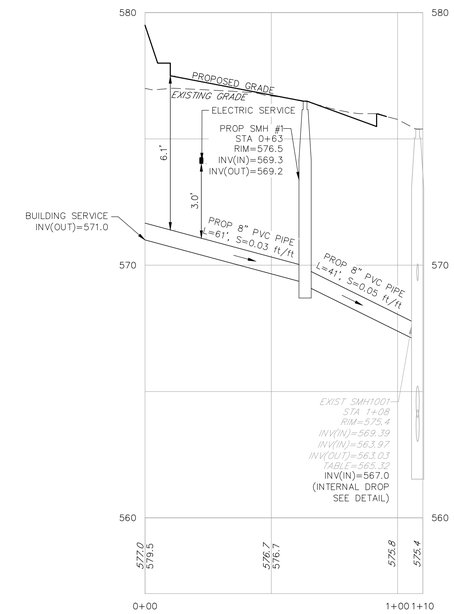


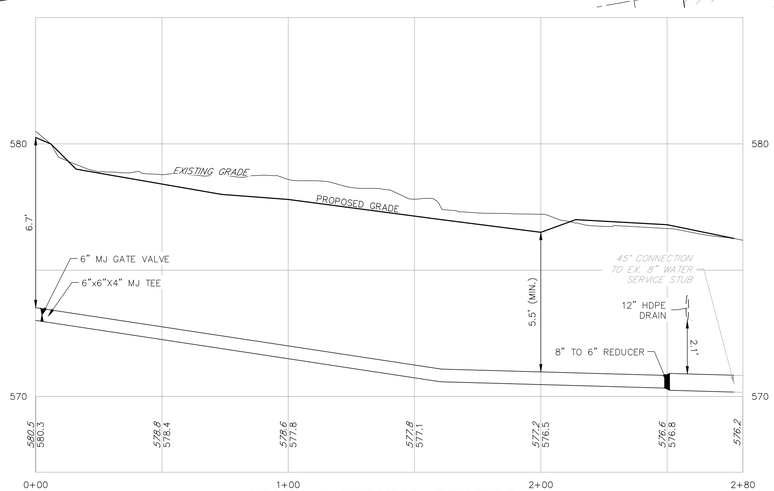
NOTES

1. SEE NOTES ON SHEET C-01.
2. SEE SEWER PLAN AND PROFILE ON SHEET C-07
3. ELECTRIC VEHICLE CHARGING STATION INFRASTURCTURE 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

HORIZONTAL SCALE 1"=30'

30 15 0 30

3 0 3

VERTICAL SCALE 1"=3'

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
8/26/24

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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**

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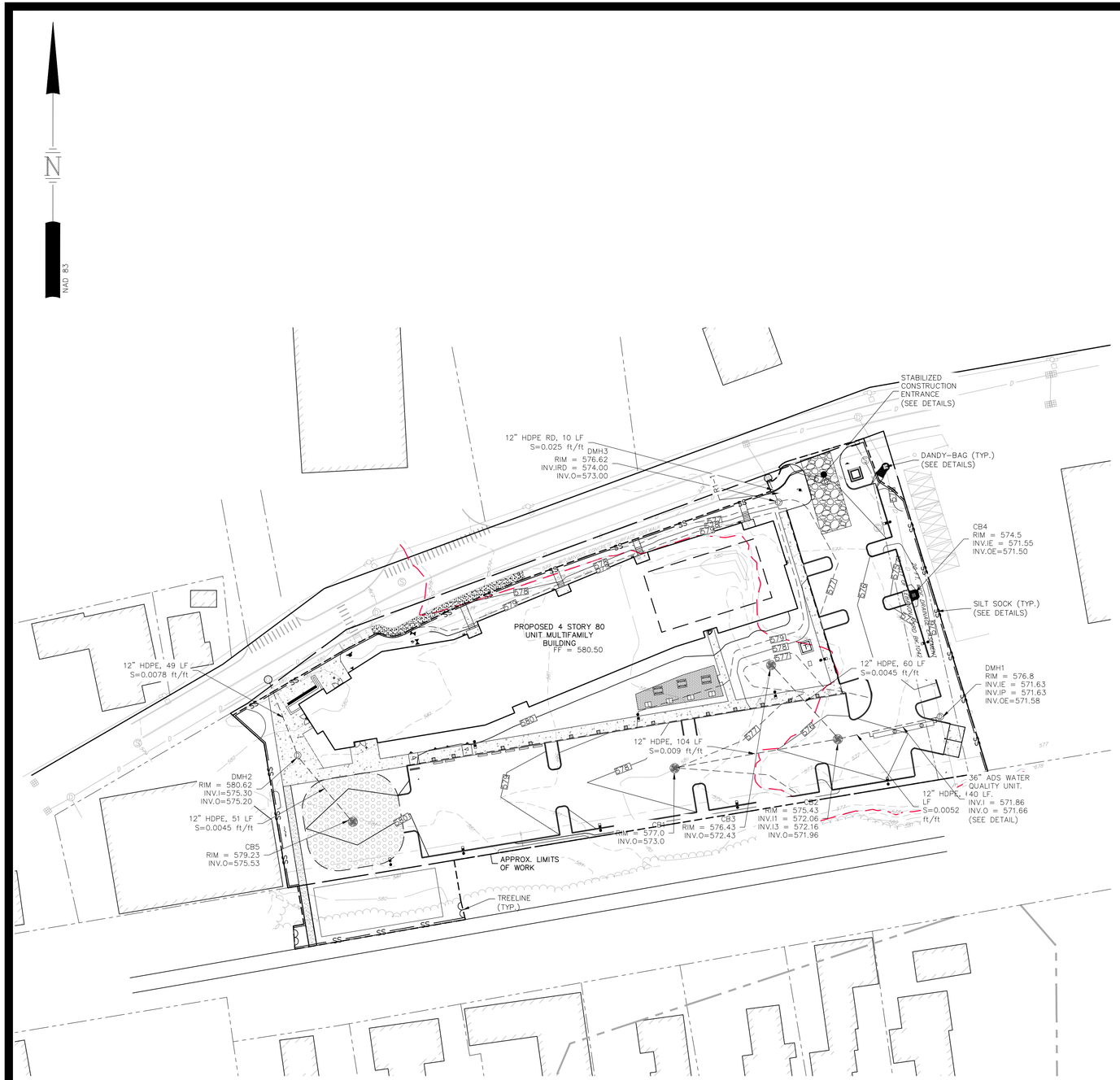

CONSTRUCTION GENERAL PERMIT

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, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF 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 GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

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 A
   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 RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
   POST-CONSTRUCTION RUNOFF CN: CN=84
   IMPERVIOUS SURFACE AREA: 1.4± AC

6. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   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 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. 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 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

7. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   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 SWEPT 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 TARPAULIN.

   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 MUNICPAL 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 TYPES OF 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 EPA 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 CONVEYANCES 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 ONSITE. 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 DISCOVERY.
    - 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, REGARDLESS OF SIZE.
    - 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 PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

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.

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

STORMWATER MANAGEMENT PLAN

THE MUSE APARTMENTS

20 SPENCER STREET LEBANON, NH

OWNED BY

CITY OF LEBANON

PREPARED FOR

THE MUSE LEBANON, LLC

SCALE: 1"=40' **AUGUST 12, 2024**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

LANDSCAPE NOTES

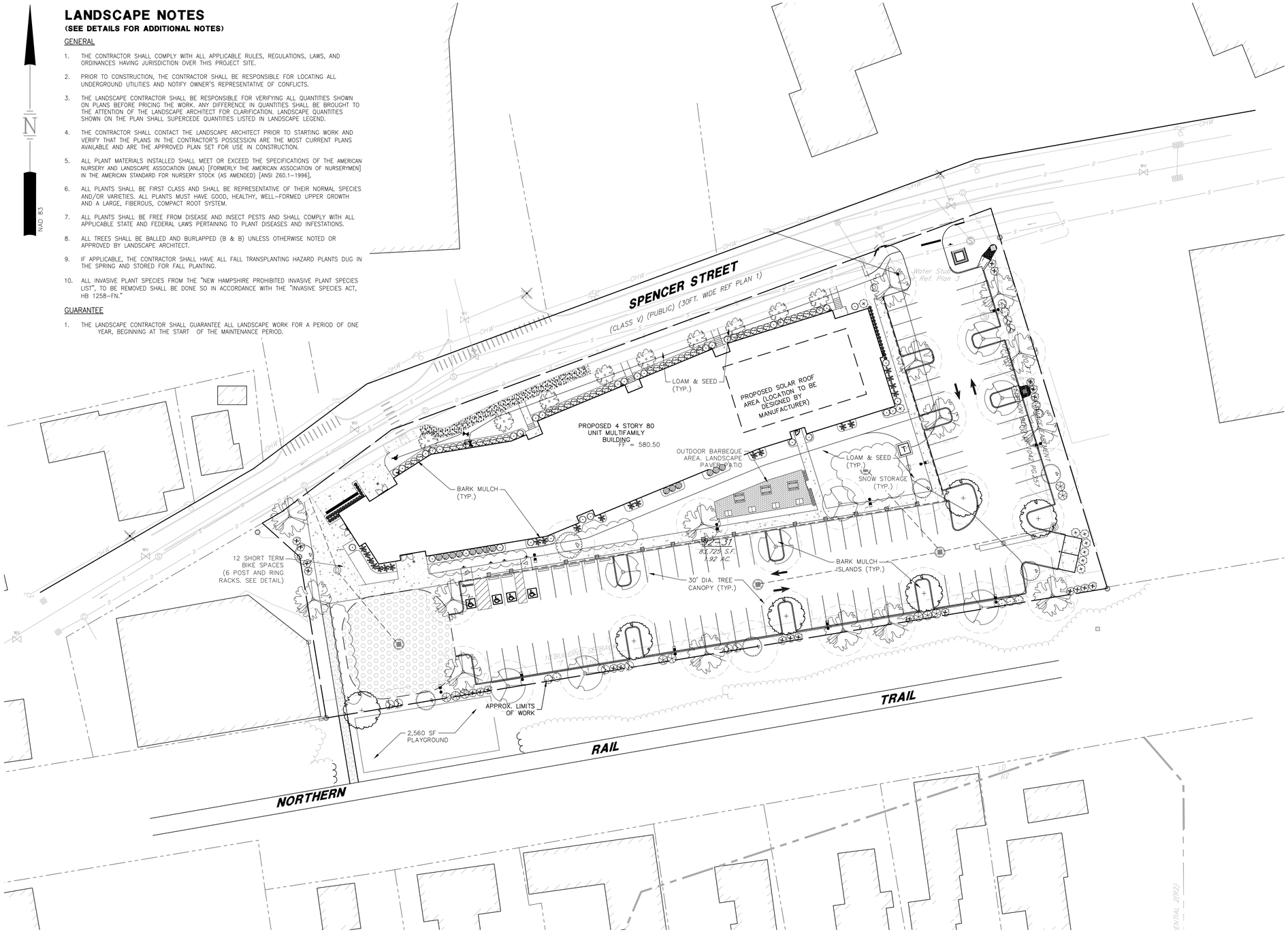
(SEE DETAILS FOR ADDITIONAL NOTES)

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 NURSERYMEN] 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.



LANDSCAPE LEGEND

SYMBOL	QTY.	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	15	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2" TO 3" CAL.	B&B
	6	PLATANUS X ACREIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANETREE	2 1/2" TO 3" CAL.	B&B
	8	ULMUS AMERICANA 'PRINCETON' PRINCETON AMERICAN ELM	2 1/2" TO 3" CAL.	B&B
	9	ACER FREEMANII 'ARMSTRONG GOLD' ARMSTRONG GOLD MAPLE	2 1/2" TO 3" CAL.	B&B
	7	AMELANCHIER CANADENSIS SERVICEBERRY	2 1/2" TO 3" CAL.	B&B
	21	CALAMAGROSTIS A. 'KARL FORESTER' KARL FORESTER FEATHER REED GRASS	2 GAL.	CONT.
	10	FORSYTHIA 'LYNWOOD GOLD' LYNWOOD GOLD FORSYTHIA	3' TO 4'	CONT.
	24	JUNIPERUS C. 'SEAGREEN' SEAGREEN JUNIPER	24" TO 30"	CONT.
	43	HYDRANGEA 'ENDLESS SUMMER' ENDLESS SUMMER HYDRANGEA	24" TO 30"	CONT.
	14	HYDRANGEA P. 'BOMBSHELL' BOMBSHELL PANICLE HYDRANGEA	24" TO 30"	CONT.
	9	VIBURNUM DENTATUM ARROWWOOD VIBURNUM	3' TO 4'	CONT.
	8	THUJA O. 'SMARAGD' EMERALD GREEN ARBORVITAE	4 TO 5'	CONT.
	36	JUNIPERUS C. 'PFITZER COMPACTA' COMPACT PFITZER JUNIPER	24" TO 30"	CONT.
	8	CORNUS ALBA 'ARGENTEO–MARGINATA' VARIEGATED RED TWIG DOGWOOD	24" TO 30"	CONT.
	38	PANICUM VIRGATUM 'CAPE BREEZE' CAPE BREEZE SWITCH GRASS	3 GAL.	CONT.
	8	HEMEROCALLIS FULVA ORANGE DAYLILY	1 GAL.	CONT.

LANDSCAPE CALCULATIONS:

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) = 32 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 GROUND 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%

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

LANDSCAPE 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**

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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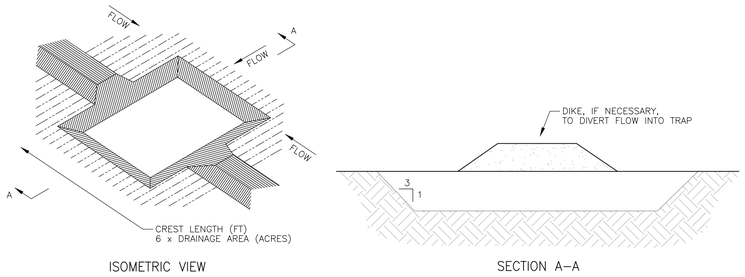

NOTES
1. SEDIMENT TRAPS AND/OR BASINS SHOULD BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED.

SEDIMENT TRAP

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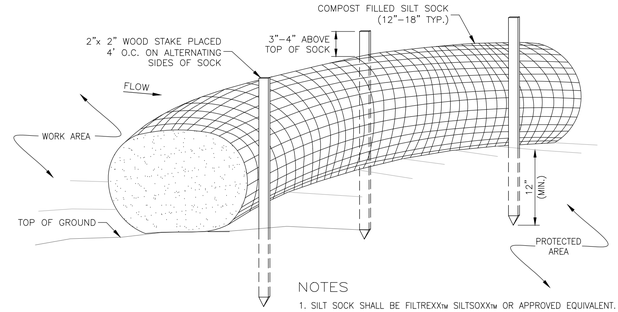
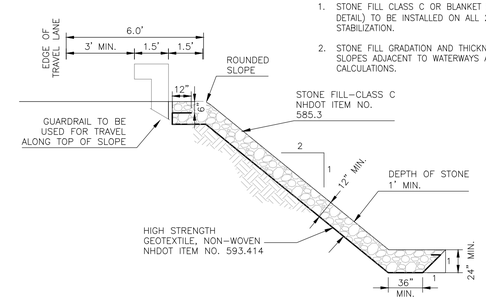


NOTES
1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK

NOT TO SCALE

NOTES
1. STONE FILL CLASS C OR BLANKET SLOPE PROTECTION (SEE DETAIL) TO BE INSTALLED ON ALL 2H:1V SLOPES FOR SLOPE STABILIZATION.
2. STONE FILL GRADATION AND THICKNESS SHALL BE DEIGNED FOR SLOPES ADJACENT TO WATERWAYS AND INCLUDED IN THE DRAINAGE CALCULATIONS.



RIPRAP SLOPE PROTECTION

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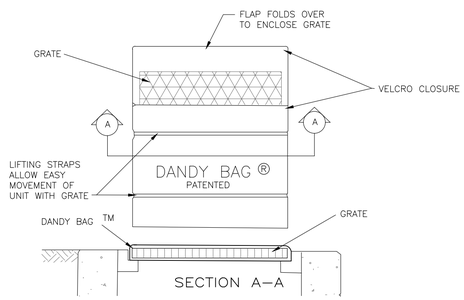


INSTALLATION

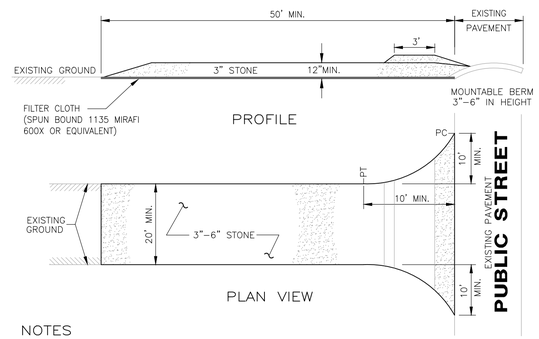
STAND GRATE ON END. PLACE DANDY BAG OVER GRATE AND ROLL GRATE OVER SO THAT OPEN END IS UP. PULL UP SACK. TUCK FLAP IN, PRESS VELCRO STRIPS TOGETHER. BE SURE END OF GRATE IS COMPLETELY COVERED BY FLAP OR DANDY BAG WILL NOT WORK PROPERLY. HOLDING HANDLES, CAREFULLY PLACE DANDY BAG WITH GRATE INSERTED INTO CATCH BASIN FRAME.

MAINTENANCE

WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL REMOVE SILT & OTHER DEBRIS OFF SURFACE AFTER EACH EVENT. REMOVE FINE MATERIAL FROM INSIDE ENVELOPE AS NEEDED.
(CONTACT DANDY PRODUCTS INC. 1–800–591–2284)

DANDY BAG DETAIL

NOT TO SCALE

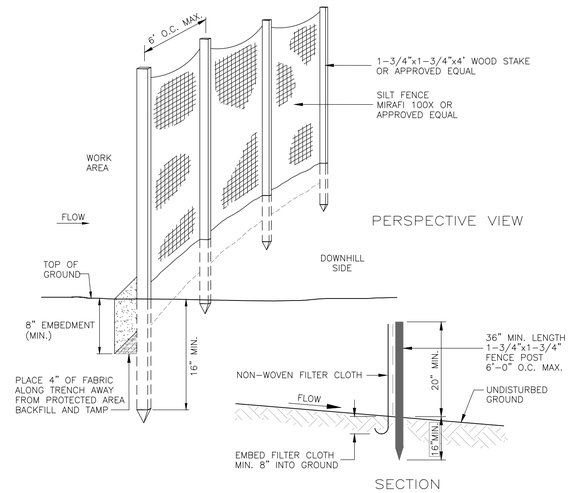


NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL 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 AND/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.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

USDA - SCS STABILIZED CONSTRUCTION ENTRANCE

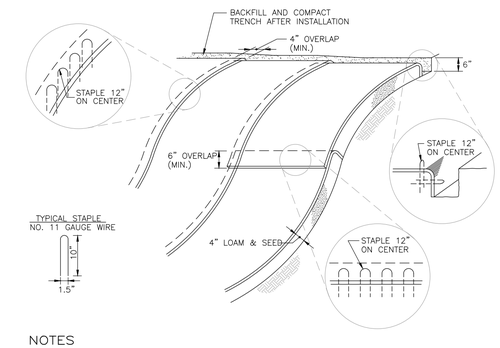
SEE PLAN FOR PROPOSED LOCATION

NOT TO SCALE



SILT FENCE DETAIL

NOT TO SCALE

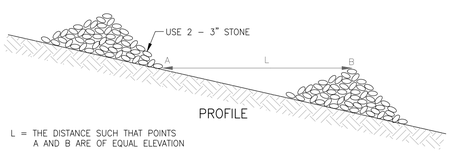


NOTES
1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
5. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC–2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD–OCF 30, OR APPROVED EQUAL.
6. BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI–FILAMENT, OR MONO–FILAMENT POLYPROPYLENE NETTING OR MESH.

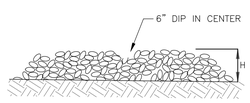
BLANKET SLOPE PROTECTION

FOR EROSION CONTROL

NOT TO SCALE



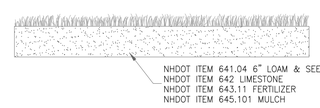
L = THE DISTANCE SUCH THAT POINTS
A AND B ARE OF EQUAL ELEVATION



H SHALL BE NOT GREATER THAN 24"
SECTION

STONE CHECK DAM

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
8/26/24

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**

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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Civil Engineers
Structural Engineers
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FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	DETAILS	D–01

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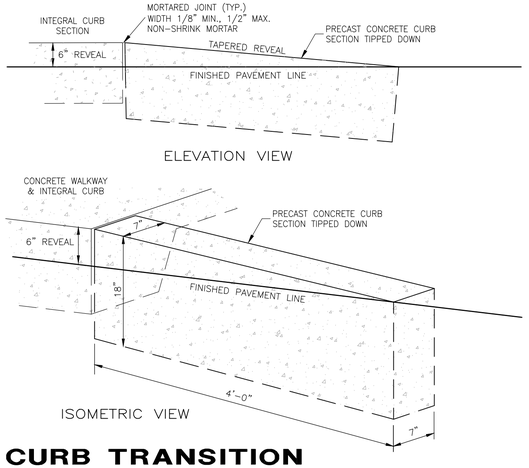
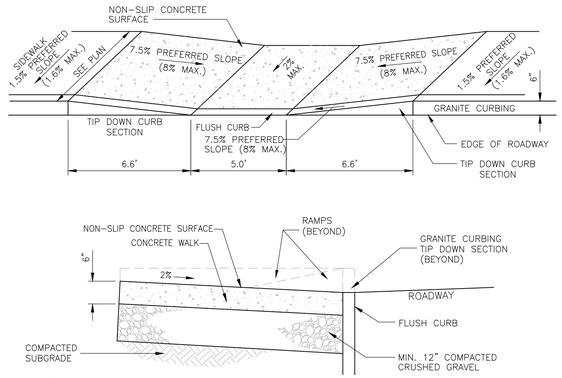
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



CURB TRANSITION

INTEGRAL CONC. TO PRECAST CONCRETE

NOT TO SCALE

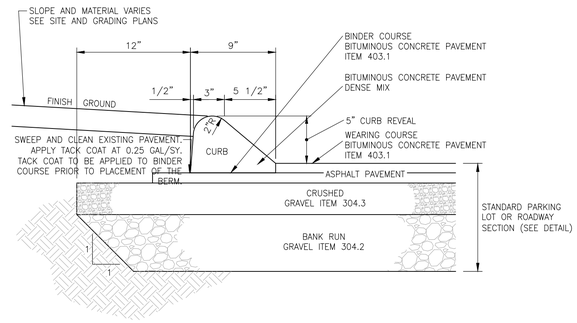


NOTES

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 2½" FROM THE TOP OF THE SLAB WITH 6" CRUSHED GRAVEL SUBBASE

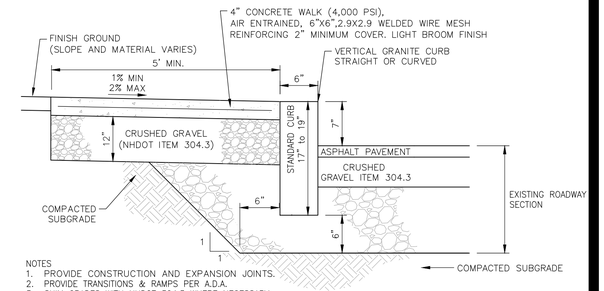
ACCESSIBLE RAMP RECESSED IN WALK

NOT TO SCALE



BITUMINOUS CONCRETE CURB

NOT TO SCALE



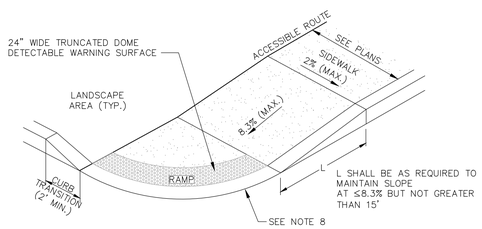
NOTES

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



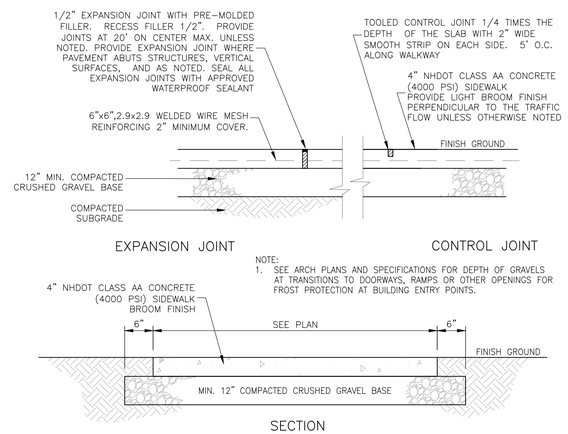
NOTES

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

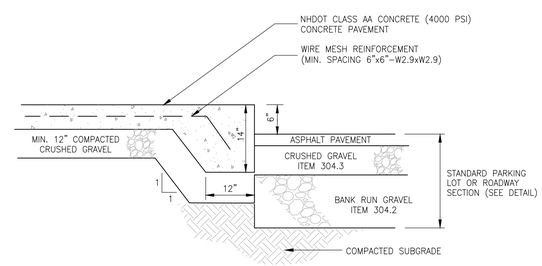
NOT TO SCALE



NOTE:
1. SEE ARCH PLANS AND SPECIFICATIONS FOR DEPTH OF GRAVELS AT TRANSITIONS TO DOORWAYS, RAMPS OR OTHER OPENINGS FOR FROST PROTECTION AT BUILDING ENTRY POINTS.

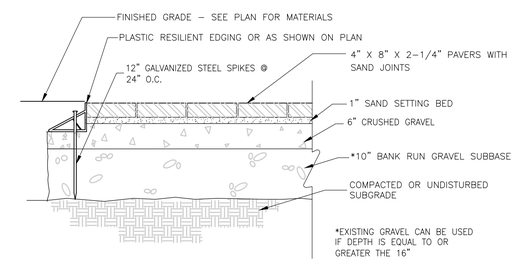
CONCRETE SIDEWALK

NOT TO SCALE



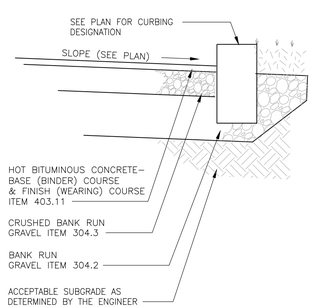
CONCRETE CURB AT SIDEWALK

NOT TO SCALE



BRICK PAVER/AGGREGATE BASE

NOT TO SCALE



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.

PARKING LOT SECTION

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

DETAILS

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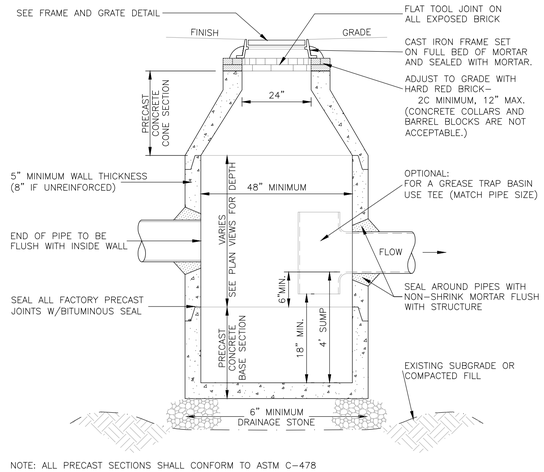
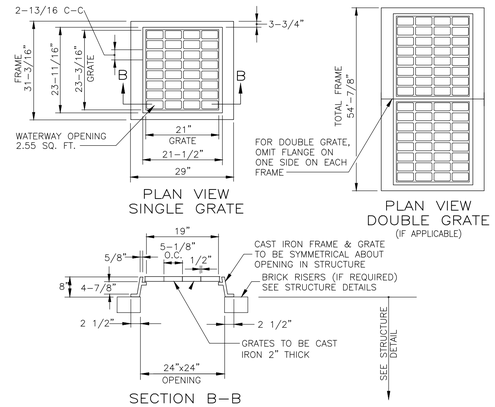
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



NOTE: ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478

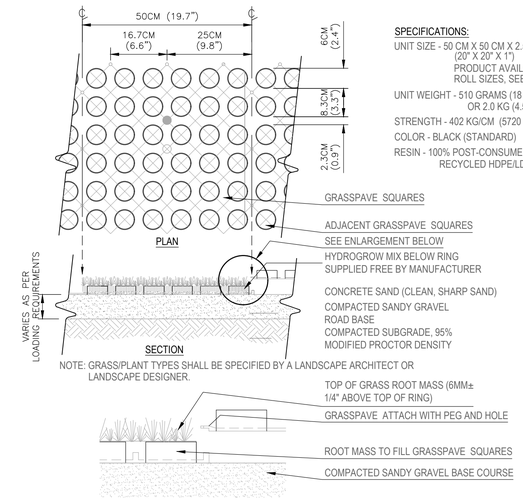
CATCH BASIN

CONCENTRIC CONE–DEEP SUMP — NOT TO SCALE



FRAME AND GRATE

NHDOT TYPE B ALT 1 — NOT TO SCALE



NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER.

SPECIFICATIONS:

UNIT SIZE - 50 CM X 50 CM X 2.5 CM (20" X 20" X 1") PRODUCT AVAILABLE IN 9 PRODUCT ROLL SIZES, SEE ROLL SIZES

UNIT WEIGHT - 510 GRAMS (18 OZ) OR 2.0 KG (4.5 POUNDS)

STRENGTH - 402 KG/CM (5720 PSI)

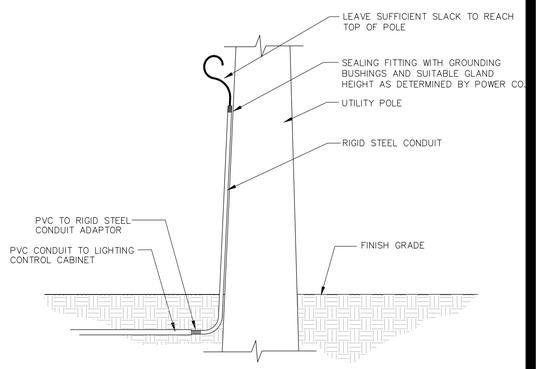
COLOR - BLACK (STANDARD)

RESIN - 100% POST-CONSUMER RECYCLED HDPE/LDPE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 112-002.

GRASS PAVE 2

NOT TO SCALE

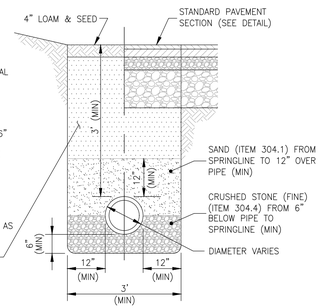


NOTE: CONDUIT SIZE AS INDICATED ON DRAWINGS.

SERVICE POLE RISER

NOT TO SCALE

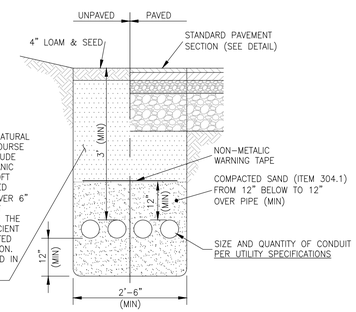
SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER 6" IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 12" LIFTS AND THOROUGHLY COMPACTED. IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE DESCRIBED AS ABOVE. SUITABLE MATERIAL SHALL BE PLACED IN 18" LIFTS AND THOROUGHLY COMPACTED



STORM DRAIN TRENCH

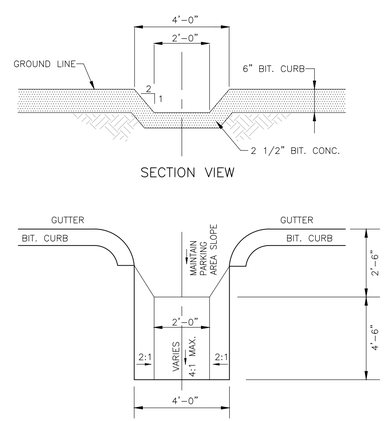
NOT TO SCALE

SUITABLE MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER 6" IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 98% STANDARD PROCTOR DENSITY.



UGE & TEL/COM TRENCH

NOT TO SCALE



PAVED SWALE

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

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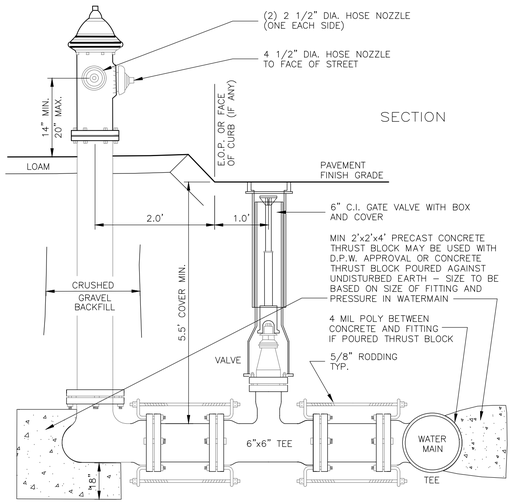
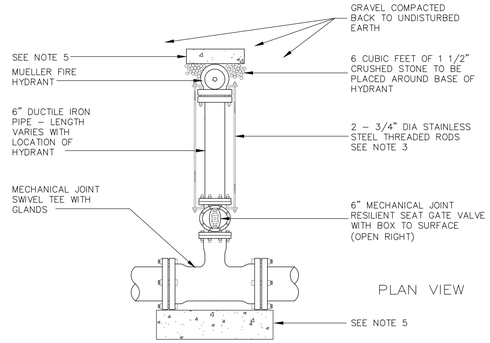
DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



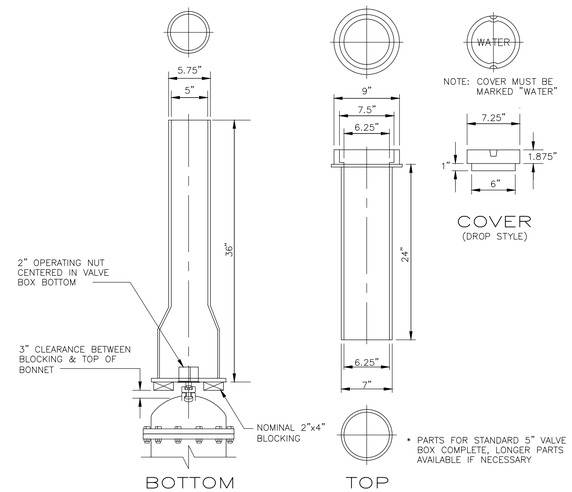


NOTES

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. ALL THREADED RODS AND NUTS MUST BE STAINLESS STEEL.
4. WHEN DISTANCE FROM WATERMAIN TO HYDRANT IS MORE THAN 10', SUBSTITUTE MEGALUGS IN LIEU OF THREADED ROD OR GRIP RINGS.
5. MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH D.P.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

FIRE HYDRANT AND GATE VALVE

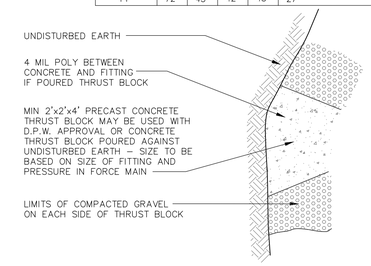
NOT TO SCALE



VALVE BOX

NOT TO SCALE

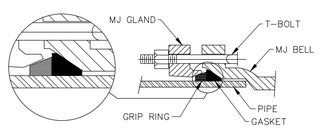
TABLE OF DIMENSIONS					
PIPE SIZE	90° BEND		45° BEND		22 BEND
	WIDTH	HGT.	WIDTH	HGT.	WIDTH
3"	–	–	–	–	–
6"	33"	21"	18"	21"	12"
8"	45"	27"	24"	27"	18"
10"	60"	36"	36"	36"	24"
12"	66"	39"	36"	42"	24"
14"	72"	45"	42"	48"	27"



NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE, UNLESS NOTED OTHERWISE. REFER TO SEWER EXTENSION PROFILE.

THRUST BLOCKING BEHIND FITTINGS INSTALLATION



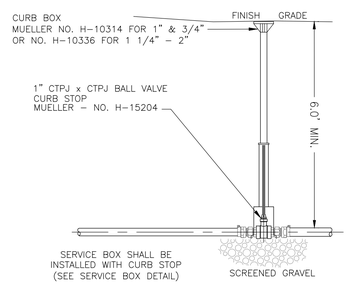
NOTE:

1. ALL WATER MAINS (DUCTILE IRON) AND SERVICES SHALL BE POLYETHYLENE WRAP. ALL GASKETS SHALL BE NITRILE.

GRIP RING JOINT RESTRAINT OR EQUAL SHALL BE UTILIZED AT ALL BENDS AND AT ALL CHANGES IN DIRECTION OF WATER MAINS WHERE A RESTRAINED JOINT IS NEEDED.

GRIP RING JOINT RESTRAINT

NOT TO SCALE



CURB STOP

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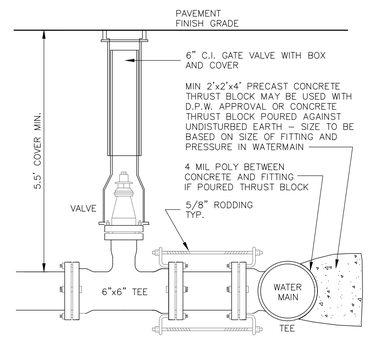

BURIED GATE VALVE

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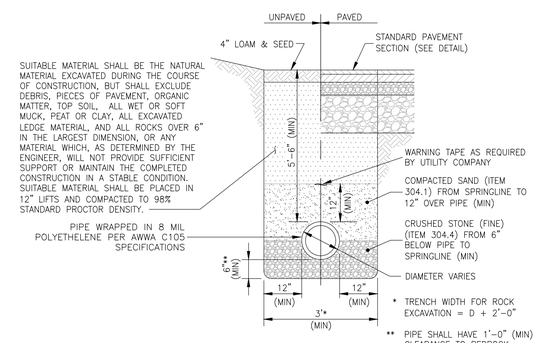

WATER MAIN TRENCH

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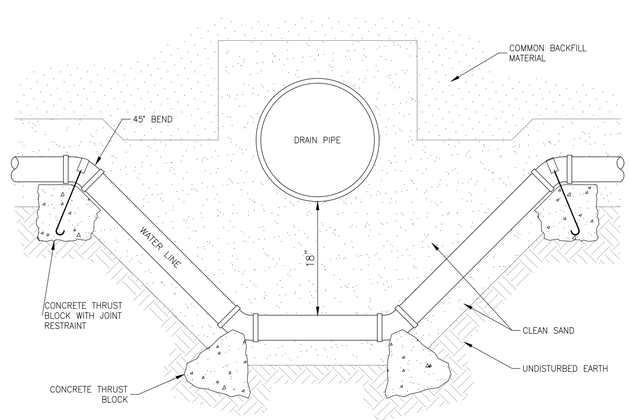

WATER LINE CROSSING UNDER DRAIN

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
8/26/24

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**

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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96202.01	CK	NG	CADFILE	DETAILS	D-04

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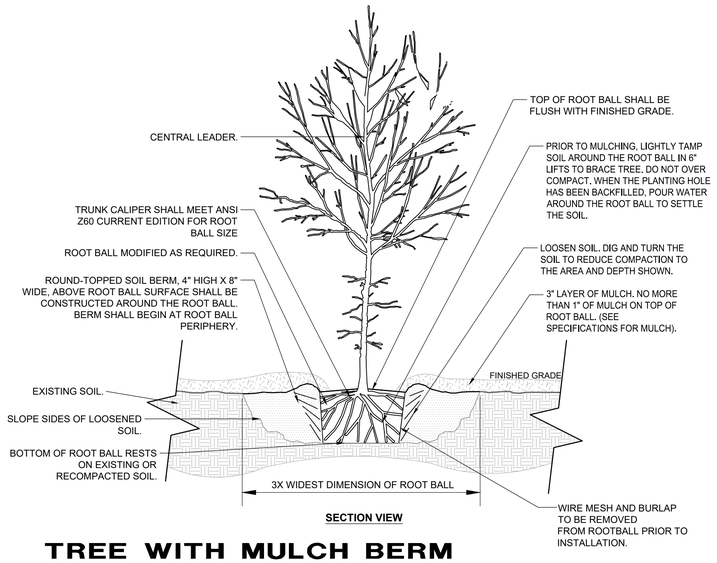
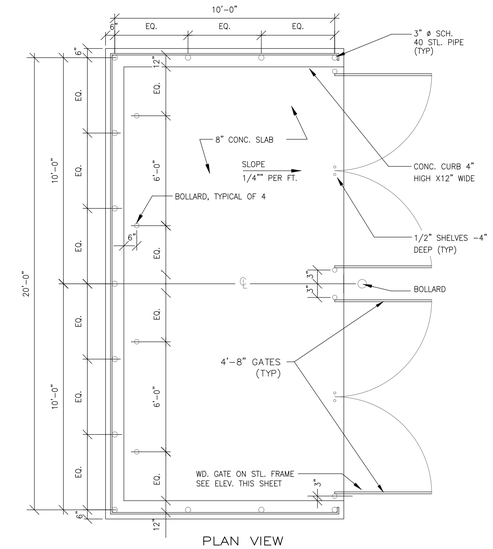
DIG SAFE
CONTACT DIG SAFE, 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



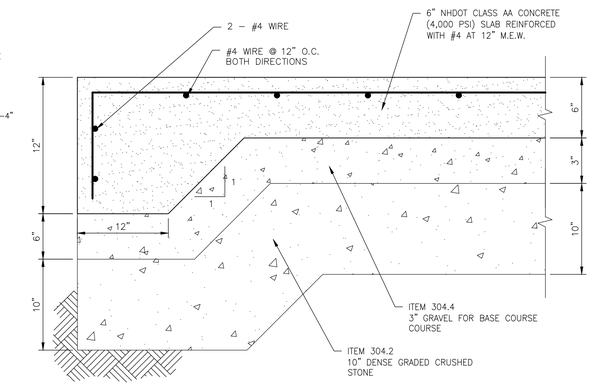
SECTION VIEW

TREE WITH MULCH BERM

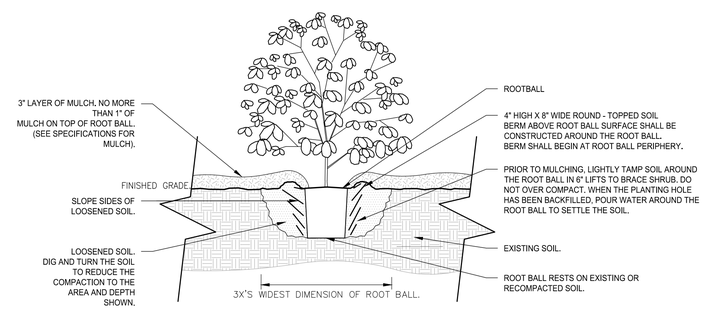
NOT TO SCALE



PLAN VIEW



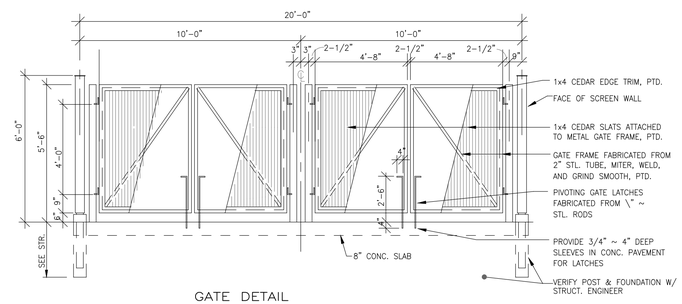
SECTION



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE



GATE DETAIL

WOOD TRASH ENCLOSURE

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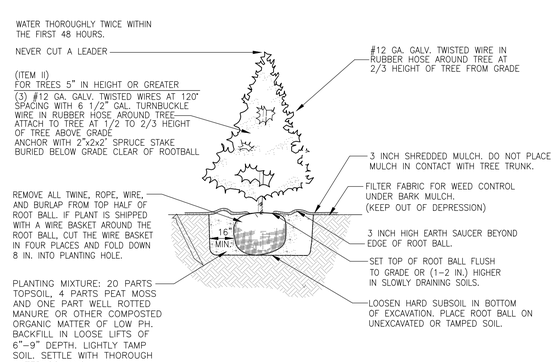

EVERGREEN PLANTING

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

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OWNED BY

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SCALE: NOT TO SCALE **AUGUST 12, 2024**

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.
      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

   B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER, TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEANOUT WITH A FLASHLIGHT.

   C. DRY FLUORESCENE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWN-STREAM MANHOLE.

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

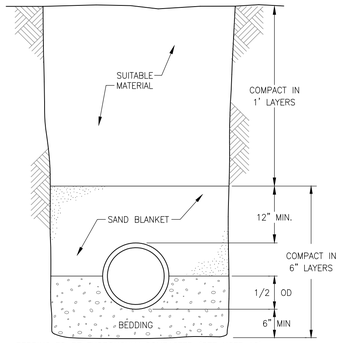
10) BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED.

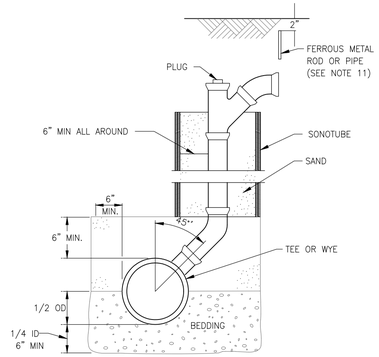
11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.



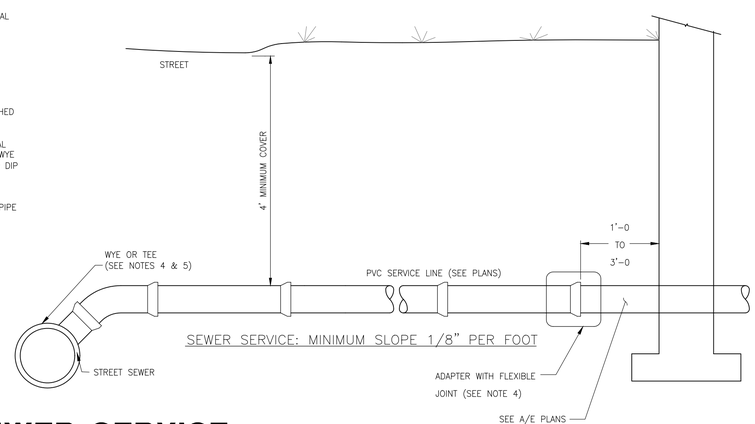
BEDDING TO BE THOROUGHLY COMPACTED (SEE NOTE 10)

TRENCH CROSS-SECTION
NOT TO SCALE



BACKFILLING TO BE BROUGHT UP EVENLY ON ALL SIDES.

CHIMNEY (SEE NOTE 12)
NOT TO SCALE



SEWER SERVICE
NOT TO SCALE

SEWER SERVICE DETAILS

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.

2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.

4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 FOR DUCTILE IRON CASTINGS.

   AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL- OR SAND-LINED MOLDS, FOR WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS.

   JOINTS SHALL BE OF THE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL-AND-SOCKET TYPE AS APPROPRIATE FOR THE SPECIFIC APPLICATION. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.

6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.

7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.

   JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.

8. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

9. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

   ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

   LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

   ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

   UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

10. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.

11. ALL ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.

12. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.

13. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

   SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

   WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

   TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPE'S OUTSIDE DIAMETER PLUS 24 INCHES.

   PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

   PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

   PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

   COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

   BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

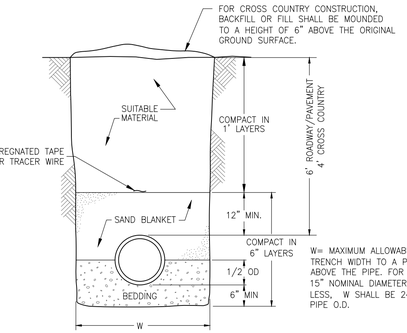
   TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

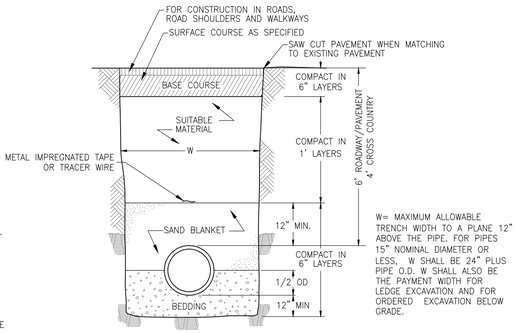
   BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

   WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

   TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.



EARTH CONSTRUCTION
NOT TO SCALE



LEDGE CONSTRUCTION
NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

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PREPARED FOR

THE MUSE LEBANON, LLC

SCALE: NOT TO SCALE **AUGUST 12, 2024**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	DETAILS	D-06

GENERAL NOTES

1. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
4. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
5. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
6. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
7. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
8. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
9. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
   (a) SIKAFLEX-12-SL
   (b) SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
10. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.
11. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.
   (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
   (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
      2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:
         A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
         B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
         C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
   (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
   (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
   (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
12. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
13. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME
14. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
15. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
16. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
17. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

18. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.
19. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.
20. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:
   (a) ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
   (b) CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
   (c) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.
   (d) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
21. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.
22. GRAVITY SEWER PIPE SHALL BE TESTED IN ACCORDANCE WITH ENV-WQ 704.06:
   (a) ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.
   (b) LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH THE FOLLOWING TESTING STANDARDS IN EFFECT AT THE TIME THE TEST IS CONDUCTED:
      (1) ASTM F1417 "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR"; OR
      (2) UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
   (c) ALL NEW GRAVITY SEWERS SHALL BE:
      (1) CLEANED AND VISUALLY INSPECTED USING A LAMP TEST AND BY INTRODUCING WATER TO DETERMINE THAT THERE IS NO STANDING WATER IN THE SEWER; AND
      (2) TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
   (d) ALL PLASTIC SEWER PIPE SHALL BE VISUALLY INSPECTED AND DEFLECTION TESTED NOT LESS THAN 30 DAYS NOR MORE THAN 90 DAYS FOLLOWING INSTALLATION.
   (e) THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% PERCENT OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95% OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.

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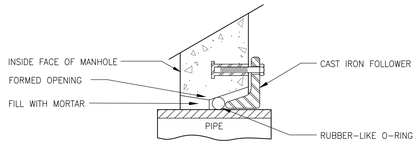
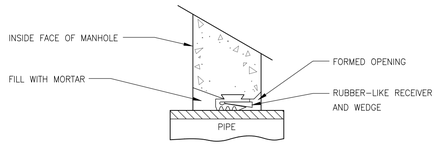
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



RES-SEAL
(OR ACCEPTABLE SUBSTITUTE)



PRESS-WEDGE II
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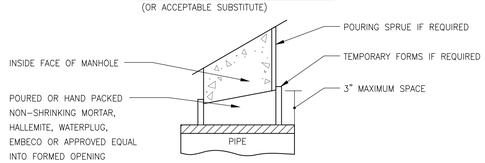

NON-SHRINKING MORTAR
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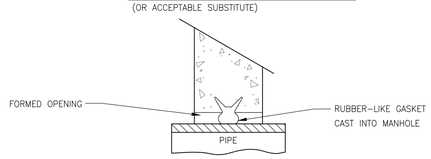

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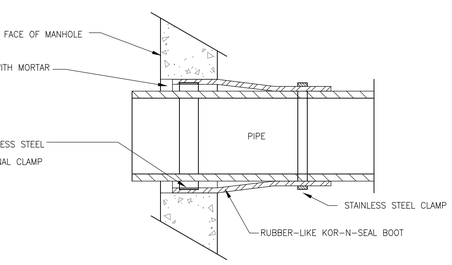
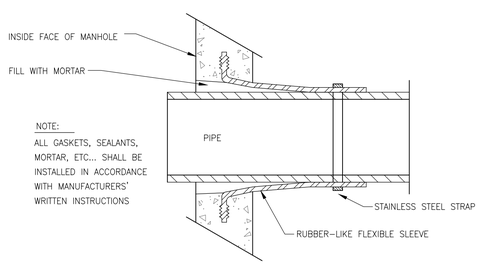


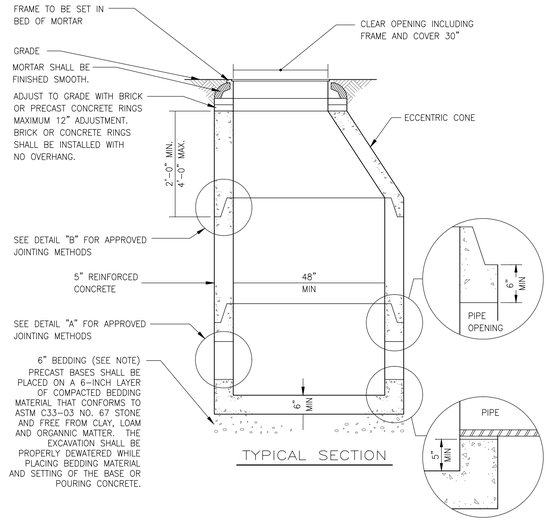
KOR-N-SEAL JOINT SLEEVE
(OR ACCEPTABLE SUBSTITUTE)



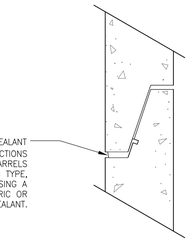
NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
(OR ACCEPTABLE SUBSTITUTE)

DETAIL "A" – PIPE TO MANHOLE JOINTS



TYPICAL SECTION

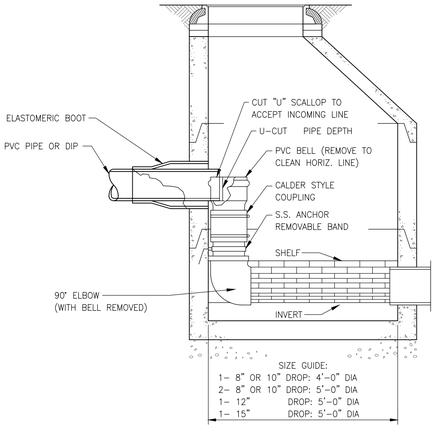


ELASTOMERIC SEALANT

NOTES:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

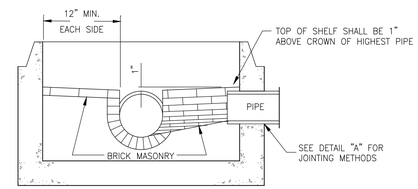
STATE OF NEW HAMPSHIRE APPROVED PRODUCTS
A) SIKAFLEX-12-SL
B) SONNEBORN BUILDING PRODUCTS SONOLASTIC SL-1

DETAIL "B" – HORIZONTAL JOINTS

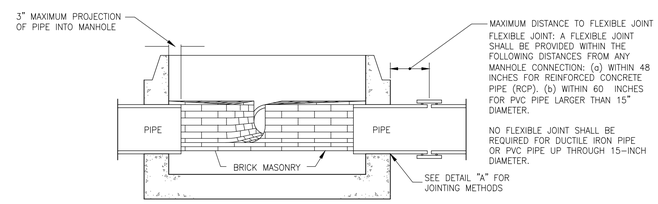


INSIDE DROP MANHOLE

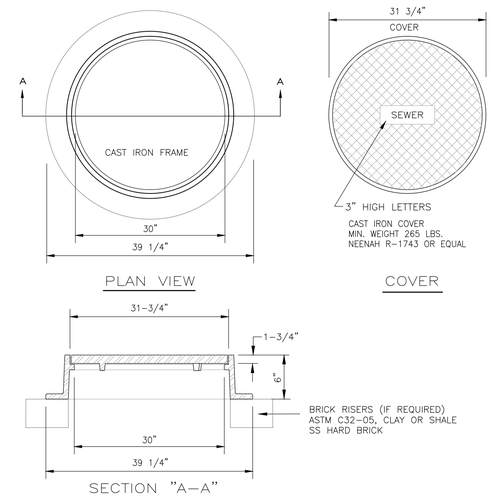
NOTES:
1. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE.
3. BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN.



SECTION "B-B"



SECTION "A-A"

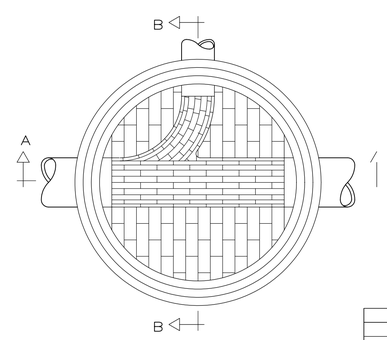


PLAN VIEW

COVER

SECTION "A-A"

MANHOLE FRAME & COVER
HEAVY DUTY



TYPICAL MANHOLE – PLAN VIEW

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
9/26/24

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**

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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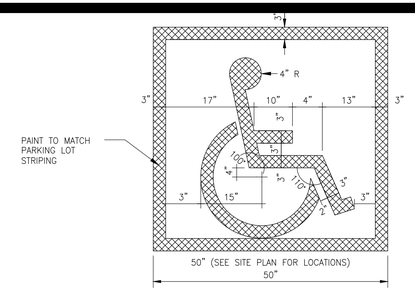
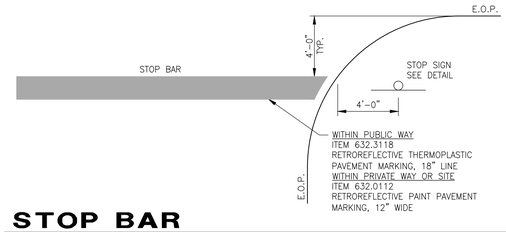
STANDARD MANHOLE DETAILS

NOT TO SCALE



PAINTED HANDICAP SYMBOL

NOT TO SCALE



STOP BAR

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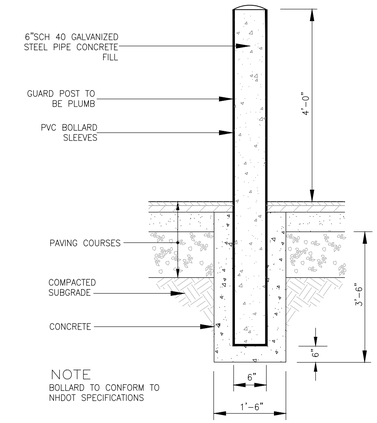
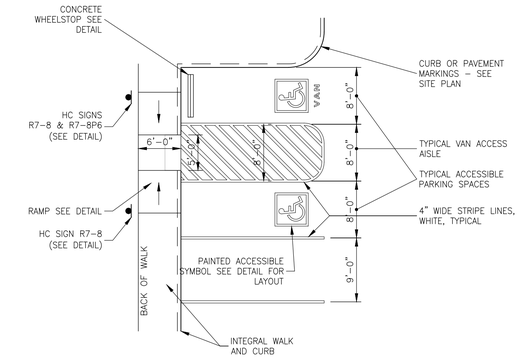


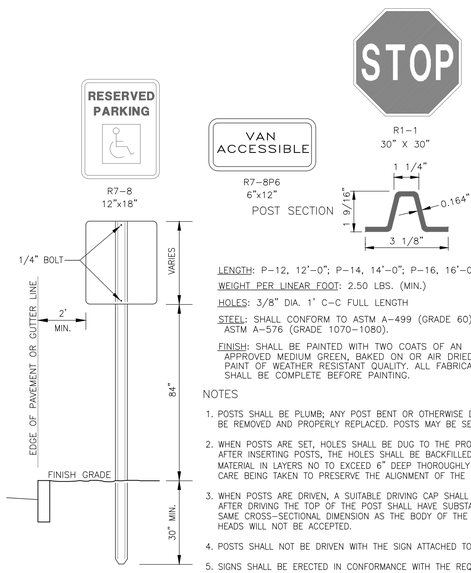
GUARD POST (BOLLARD)

NOT TO SCALE



VAN ACCESSIBLE STRIPING LAYOUT

NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1" C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NO TO EXCEED 6" DEEP THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS-SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIEMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

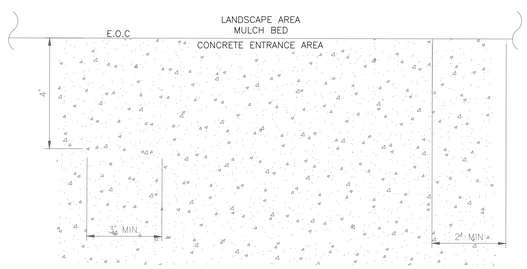
WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.

DIMENSIONS SHOWN ARE NOMINAL.

ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

SIGN POST IN GRADE

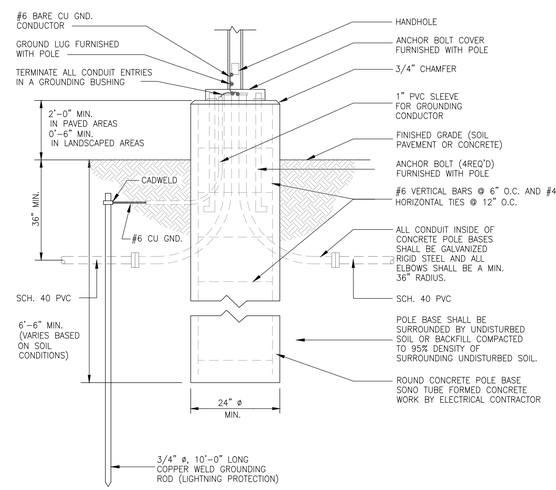
NOT TO SCALE



BIKE RACK

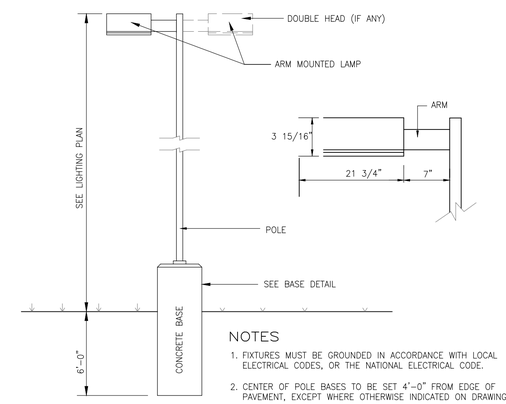
TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS

NOT TO SCALE



LIGHT POLE BASE

NOT TO SCALE

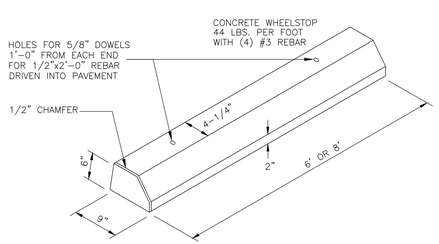


NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON DRAWING.
3. LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY BE REQUIRED.
4. SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.

LIGHT POLE

NOT TO SCALE



CONCRETE WHEELSTOP

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
8/26/24

REV.	DATE	DESCRIPTION	DR	CK
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

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PREPARED FOR

THE MUSE LEBANON, LLC

SCALE: NOT TO SCALE **AUGUST 12, 2024**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	DETAILS	D-08

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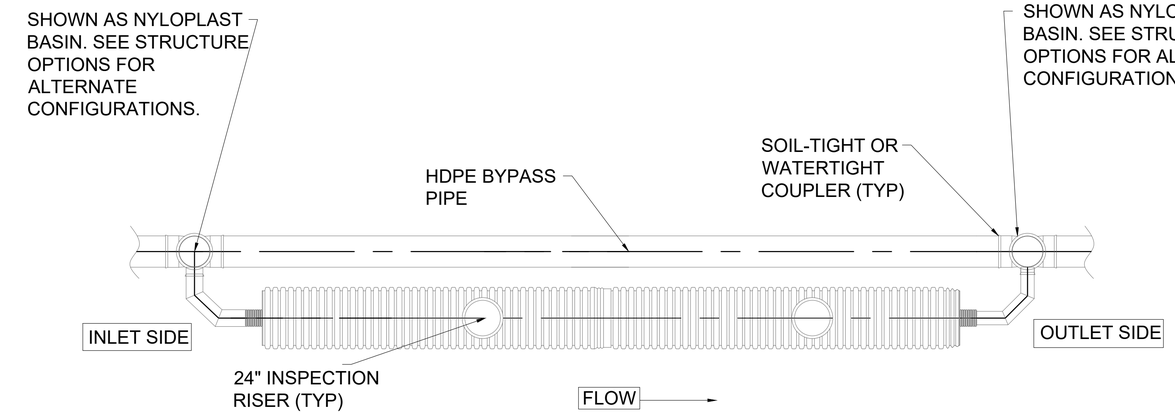
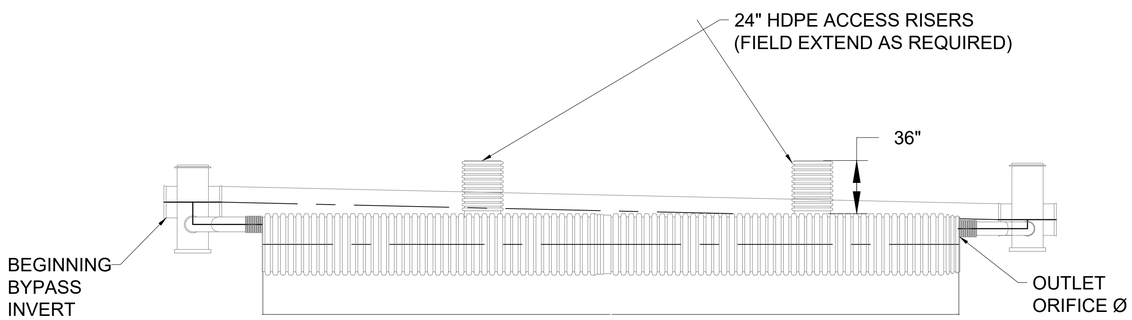
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



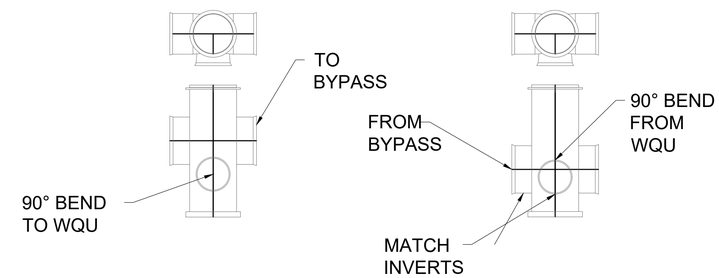
PLAN VIEW



PROFILE VIEW

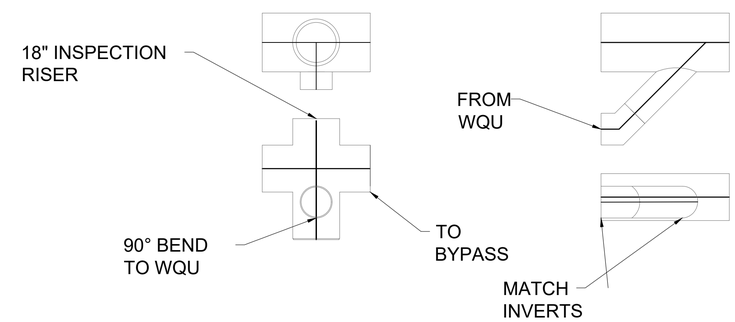
STRUCTURE OPTIONS

- 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.



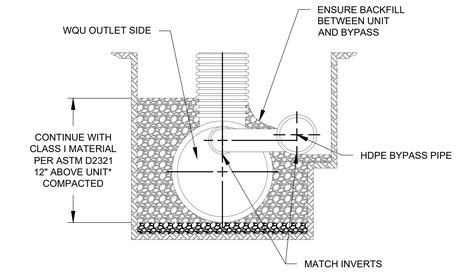
INLET STRUCTURE
NYLOPLAST BASIN

OUTLET STRUCTURE
NYLOPLAST BASIN



INLET STRUCTURE
FABRICATED SUMP TEE

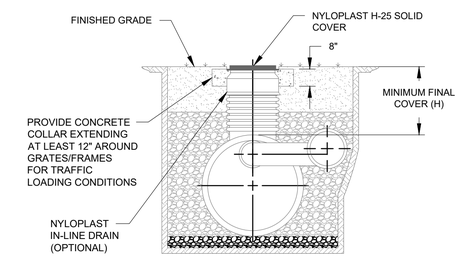
OUTLET STRUCTURE
FABRICATED REDUCING WYE



NOTES:

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 EXTENTIONS 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

NOTES:

1. SEE STANDARD DETAILS STD-501 AND STD-502 FOR STORM WATER QUALITY UNIT PRODUCT DETAILS.
2. REFERENCE TECHNICAL NOTE 1.03 FOR ADDITIONAL DESIGN INFORMATION.
3. ELEVATION CHANGE DENOTES THE ELEVATION DROP FROM INVERT OF BYPASS AT INLET TO INVERT OF BYPASS AT OUTLET.

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

NOT TO SCALE

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**

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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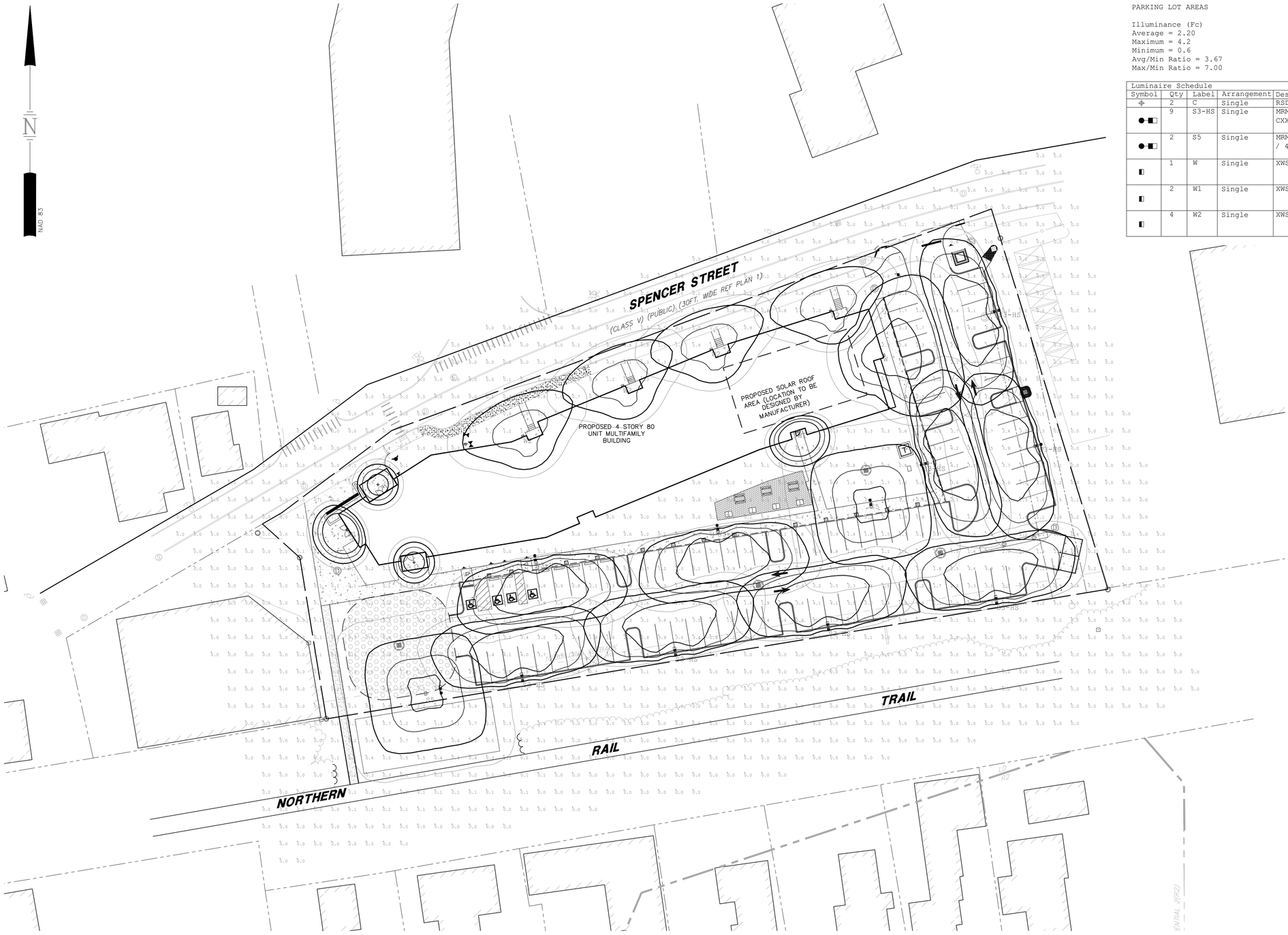
FILE	DR	JED	FB	–	D-09
96202.01	CK	NG	CADFILE	DETAILS	



PARKING LOT AREAS

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	RSD561120SWH 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 S11G16 S AB 4BC	LSI INDUSTRIES, INC.	18'	3000K	558
	2	S5	Single	MRM-LED-07L-SIL-5W-UNV-DIM-30-70CRI-CXX / 4SQ B3 S11G16 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

NOTES

1. CALCULATIONS AND LIGHTING DESIGN BY EXPOSURE LIGHTING, INC.

WALL MOUNTED LIGHT
MRM

SURFACE MOUNTED DOWN LIGHT
MRM

POLE MOUNTED LIGHT
MRM

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31
LIGHTING 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**

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HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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FILE	DR	JED	FB		
96202.01	CK	NG	CADFILE	–	L-01

L-01

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:

1. SITEWORK SHOWN FOR COORDINATION PURPOSES ONLY. SEE SURVEY, CIVIL AND LANDSCAPE DRAWINGS FOR SITE INFORMATION AND ADDITIONAL DETAILS.
2. FIRE PROTECTION SYSTEMS AND LOCATIONS WILL BE PROVIDED DURING BUILDING PERMIT REVIEW AND COORDINATED WITH THE LOCAL AHJ.
3. 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	

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BOSTON, MA 02118
O: 617.765.8000
www.embarcdesign.com

OWNER
BROOKLINE OPPORTUNITIES
PO BOX 847 HOLLIS NH, 03049

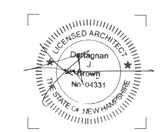
CONSULTANTS

CIVIL ENGINEER
TF MORAN, INC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
604-472-4488

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 #: 23000
SCALE: 1" = 30'-0"

DRAWING TITLE
BUILDING PLANS

DRAWING NUMBER
A100

copyright: EMBARC INC.

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1 NORTH ELEVATION
1/16" = 1'-0"

3 SOUTH ELEVATION
1/16" = 1'-0"

4 WEST ELEVATION
1/16" = 1'-0"

2 EAST ELEVATION
1/16" = 1'-0"

GENERAL NOTES:

1. SITEWORK SHOWN FOR COORDINATION PURPOSES ONLY. SEE SURVEY, CIVIL AND LANDSCAPE DRAWINGS FOR SITE INFORMATION AND ADDITIONAL DETAILS.
2. FIRE PROTECTION SYSTEMS AND LOCATIONS WILL BE PROVIDED DURING BUILDING PERMIT REVIEW AND COORDINATED WITH THE LOCAL AHJ.
3. SEE LIGHTING PLAN L-01 FOR LIGHTING INFORMATION
4. SOME FACADES SHOWN AT ANGLE, PLEASE SEE PLANS FOR FACADE LENGTH MEASUREMENTS
5. 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.

ARCHITECT
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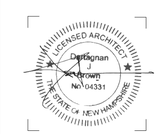
MUSE APARTMENTS
20 SPENCER STREET
LEBANON, NH
SITE DEVELOPMENT PLANS

REVISIONS

MARK	ISSUE	DATE
1	REVISION 1	08/26/24



DRAWING INFORMATION

ISSUE:	SITE DEVELOPMENT PLANS
DATE:	
PROJECT #:	23000
SCALE:	1/16" = 1'-0"

DRAWING TITLE
ARCHITECTURAL ELEVATIONS

DRAWING NUMBER
A200

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STORMWATER MANAGEMENT PLAN

The Muse Apartments

Tax Map 92 Lot 31

20 Spencer Street

Lebanon, NH

Prepared On:

August 12, 2024
Revised – August 26, 2024

Prepared for:

The Muse Lebanon, LLC
PO Box 847
Hollis, NH 03049

Job Number:
96202.01

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
8/26/24

Prepared by:

TFM®
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Landscape Architects
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www.tfmoran.com

The Muse Apartments

Tax Map 92 Lot 31
20 Spencer Street
Lebanon, NH
~~August 12, 2024~~
August 26, 2024

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Storm Water Methodology
Pre-development & Post-development
Groundwater Recharge
Stormwater Treatment
Erosion Control Measures
Conclusion
Peak Rate Flows
Treatment

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Web Soil Survey (NRCS) Report
Aerial Map (Figure 2)
FEMA National Flood Hazard Layer FIRMette
Photographs
Extreme Precipitation Table

Part 3 Pre-development Drainage Analysis
Pre-development HydroCAD Calculations
Diagram
Area & Soil Listings
Node Listing: 1-INCH, 2-yr, 25-yr, 50-yr, & 100-yr (Per Lebanon DR6.6)

Part 4 Post-Development Drainage Analysis
Post-development HydroCAD Calculations
Diagram
Area & Soil Listings
Node Listing: 1-INCH, 2-yr, 25-yr, 50-yr, & 100-yr (Per Lebanon DR6.6)

Part 5 Inspection and Maintenance Manual
Inspection & Maintenance Manual

Part 6 Drainage Plans
Drainage Plans (11”x17”)
Pre-Development Drainage Map – D-01
Post-Development Drainage Map – D-02
Pre-Development & Post-Development Drainage Plans (Full-Size in pocket)

Executive Summary

- 20 Spencer Street, Lot 92 Tax Map 31 is an existing 1.92 acre parcel in Lebanon, NH that has historically functioned as a storage and outdoor facility for NHDOT and Public Works. It is almost entirely impervious, compacted gravel surface. The property is on a secondary street in the Lebanon Dowtown District.

- This project proposes to redevelop the site for a proposed 80 unit, 4-story multifamily apartment building (18,862 SF footprint) with associated parking and site utilities, sewer, water, stormwater management, landscaping and lighting.

- The City currently owns the property, and the post development stormwater system is intended to be connected to the municipal drainage system

- A closed drainage system is proposed to capture runoff from the site. This site will provide pre-treatment of stormwater for all impervious areas and provide treatment of approximately 20,155 SF of paved parking (CB 1, 2, & 3) prior to discharging to the municipal system.

- This site is within the Mascoma River watershed. The municipal drainage system outfalls to the Mascoma River with a free tail water condition.

- Best Management Practices are proposed to manage stormwater from the development. The property is subject to groundwater management permit No. 198806030-L-001. Infiltration practices have been intentionally omitted due to the known environmental conditions identified by the groundwater management permit.

- Exiting Imperious Cover = 67,844 sf. Existing CN = 91.

- Proposed Impervious Cover =61,115 sf. Proposed CN = 84.

- There is an increase in the peak rate of runoff at the municipal discharge point from the project site, and reductions in the peak rate of runoff to all other abutting properties.

- The Water Quantity Volume (WQV) has been met by providing the required storage below the lowest orifice of the stormwater management area.

Description of Project

This project is in response to the City of Lebanon's 20 Spencer Street RFP. The proposed development plan is for 80 units of affordable homes with 8 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.

The parcel is Tax Map 93 Lot 31 and is approximately 1.92 acres, zoned Lebanon Downtown. The site is currently vacant/used for storage by the municipality. Historically it has been an outdoor storage/facility for NHDOT and Public works. 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.

During prior use of the site, groundwater and soil contamination has been documented. 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. Ongoing monitoring and reporting will be required in coordination with this redevelopment.

City Site Plan approval will be required for the site development project where the drainage and site will be reviewed by municipal departments for comment and direction.

The objectives for the post-development drainage design are to use best management practices to attenuate the flow, provide pretreatment to collected stormwater and protect the groundwater from recharge.

The intent of this report is: 1) to analyze the rate of runoff from the site for the pre-development conditions and for the post-development conditions. The drainage system will be designed to maintain the current peak rate of runoff from the site, and 2) to provide stormwater treatment and groundwater recharge for the runoff from the sites in accordance with the requirements of the State of New Hampshire and the City of Concord.

Storm Water Methodology

Pre-Development Conditions

Based on existing topography four (4) sub catchments and two (2) terminal points of interest were identified.

The project area is currently vacant, consisting of primarily gravel and cracked bituminous pavement. Due to the prior uses, there is no known evidence of a historic significance. Photographs of the existing site features can be found in section 2 of this report.

Evaluation points have been defined by abutting parcels, with identifying HydroCAD Links as follows:

- POI-A: The South property line abutting the Northern Rail Trail
  - Most of the southern portion of the site drains off property along this area
  - The topography and field verification indicates the runoff ponds offsite

- POI-D: Lebanon Municipal Drainage System
  - The frontage of the site is sloped towards Spencer Street where there is a closed municipal drainage system
  - Note that these basins are within the property lines of Tax Map 92 Lot 31
  - There is an existing drain line and easement that runs in the same direction as the easterly property line. This drainage line Is connected to an abandoned structure directly off site.
  - The City constructed a stub into the site from CB1022 for future use

- POI-C (INTERNAL NODE): the Easterly Neighbor Tax Map 78 Lot 39
  - The middle portion of the site drains overland onto the neighbor's property prior to entering the municipal drainage system in Spencer Street

- POI-E (INTERNAL NODE): the Westerly Neighbor Tax Map 92 Lot 33
  - A small, mostly paved section of the site slopes to the west where it drains, overland, to the neighbor's property prior to entering the municipal drainage system in Spencer Street

A NRCS Soils Report was obtained to determine on-site soil types. This mapping resulted in hydrologic soils group (HSG) types A and B within the area. Rainfall amounts were obtained from the Northeast Regional Climate Center and NRCS Storm Type-III was utilized for the HydroCAD Analysis. An Extreme Precipitation Table has been provided in Section 2 of this Report.

To model the site drainage, the HydroCAD Version 10.10-7a program has been used. The software is based on the SCS TR-20 technique used for modeling the hydrology and hydraulics of storm water runoff. The 1-inch, 2-year, 25-year, 50-year, and 100-year calculations are included per the requirements of the City of Lebanon.

Post-Development Conditions

A closed drainage system internal to the site has been designed to capture the runoff generated by the impervious areas of the project; the parking, roofs, sidewalks, and patios. Through a coordinated effort with the City Engineering Group a stormwater management plan has been devised that seeks to meet the goals of Section 6.6 – Stormwater Management, to the maximum practicable extent, while also balancing the benefits of the redevelopment as compared to development of raw land. Through this evaluation it was acknowledged that the rebuilt municipal closed drainage system within Spencer Street had been designed with appropriate capacity to accommodate the redevelopment of the subject lot, such that there would be no negative ramifications for additional peak rates of runoff from the site to the municipal system.

The proposed stormwater management design provides pre-treatment of stormwater for all impervious areas through the use of deep sump catch basins and provides treatment of approximately 20,155 sf of paved parking and sidewalks through a self-contained water quality unit. In that paved parking and circulation areas are the largest generators of potential stormwater pollutants associated with the redevelopment, these areas were successfully targeted to provide treatment to the extent practicable, acknowledging that currently no treatment is provided for the entirety of site.

It is proposed to connect to this system via two inline “doghouse” style structures along the drain line internal to the site. The existing catch basin on site, CB1002, will be a point of collection.

Along the frontage, runoff will sheet flow to the Spencer Street gutter line as it does today.

The site will use the existing drainage stub on CB1022 to convey the entrance patio area and the rear entrance area of the site to the municipal system.

The times of concentration for the site subcatchment areas has been identified at the minimum value of 6 minutes, with flows conveyed effectively and efficiently to the municipal drainage system, which is tributary to the Mascoma River. In that the subject site is located in proximity to the Mascoma River and a part of its associated watershed, the use of a stormwater BMP that results in detaining stormwater onsite such that its release would better coincide with the peak flows of the river would not be advisable and has been purposely avoided. Providing separation of these peak flows is an appropriate best management practice. Typical terminology is the “beat the peak” methodology.

In order to balance the site with regards to flood plain impacts and meet the objectives of the site redevelopment, subcatchment ES-1 has been regraded and conveyed to the municipal system. The increase in flow to this design point associated with the Spencer Street right-of-way is the result of redirecting approximately 32,262 sf. of the site to this location.

This project is providing treatment of stormwater runoff from approximately 20,155 SF of paved parking via an ADS Water Quality Unit (WQU). This unit is between CB2 and DMH1.

Groundwater recharge and infiltration will not be used on this site in accordance with the ongoing soils and ground water monitoring and as otherwise noted.

The objectives for the post-development drainage design are to use best management practices to meet the goals of Section 6.6 – Stormwater Management, to the maximum practicable extent, while also balancing the benefits of the redevelopment as compared to development of raw land.

There is a proposed increase in discharge from the site to the municipal system.

The post-development drainage model represents the site divided into multiple subcatchments based on the layout of the proposed stormwater collection system.

All pre-development discharge points have been analyzed in post-development conditions.

Erosion Control Measures

Erosion Control Measures are found on the Storm Water Management Plan within the plan set. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Silt Sock or a stump grindings berm is proposed along the edges of down slope site work to prevent sediment from leaving the project area. A double silt sock is posed on the northeast end of the site to protect the wetlands complex. A stabilized construction entrance is proposed at all driveway entrances to keep sediment from being tracked onto the street during construction. Catch basin erosion protection is also proposed to keep sediment out of the closed drainage system until the site is stabilized.

Permanent Erosion Control Measures

A pre-treatment closed drainage systems is proposed on the site to capture the runoff from the projects. All disturbed earth will be stabilized with permanent vegetation.

Flood Protection

Examination of the Flood Insurance Rate Map for Grafton County (All Jurisdictions), New Hampshire, Map Numbered 33009C0913E, Effective Date: February 2, 2008, indicates that the proposed work is located within the floodplain zone AE. The Base Flood Elevation (BFE) on the lot is approximately 578.4'. The building flood elevation was set as 580.5' or 2.1' above the BFE.

Conclusion

Peak Rate Flows

There is an increase in the peak rate of runoff at the municipal discharge point from the project site, otherwise there is no increase in the off-site peak rate of runoff from the project site.

FLOW (CFS)	1-IN		2-YR		25-YR		50-YR		100-YR	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
A	0.17	0.00	1.15	0.00	2.61	0.00	3.18	0.00	3.86	0.00
D	0.69	0.52	2.43	2.62	4.69	5.91	5.57	7.26	6.60	8.88

Volume (CF)	1-IN		2-YR		25-YR		50-YR		100-YR	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
A	620	0	3,631	0	8,351	0	10,272	0	12,591	0
D	2,215	1,943	8,009	8,782	15,954	19,822	19,082	24,412	22,820	30,003

Treatment

The proposed closed drainage system of deep sump catch basins has been designed to provide adequate pre-treatment for stormwater runoff. Catch basins 1, 2, and 3 are tributary to a proposed 36” diameter, 40’ long ADS water quality unit. This unit provides 80% oils and grease removal, 74% heavy metals removal and greater than 40% TP removal.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

NH DOT Name and Number and/or Project Title: The Muse Apartments 20 Spencer Street Lebanon, NH	DHR R&C #:

RPR FORM RPR PHOTO LOG

Photo #	Photo location and description
1	The pedestrian crossing, looking northeast at the west side of the site. (August 1, 2024)
2	A view majority of the site with gravel piles, looking east at the west side of the site. (August 1, 2024)
3	A view of a majority of the site, looking southeast at the northwestern end of the site. (March 12, 2024)
4	A view of a majority of the site, looking south at the northwestern end of the site. (March 12, 2024)

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Brookline Opportunities, Nashua, NH – Site Photographs

Photo 1

The pedestrian crossing, looking northeast at the west side of the site. (August 1, 2024)

Photo 2

A view majority of the site with gravel piles, looking east at the west side of the site. (August 1, 2024)

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Photo 3

A view of a majority of the site, looking southeast at the northwestern end of the site. (March 12, 2024)

Photo 4

A view of a majority of the site, looking south at the northwestern end of the site. (March 12, 2024)

The Muse Apartments

Legend

- State
- County
- City/Town

Map Scale

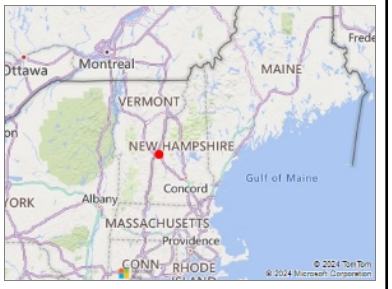
1: 5,000

© NH GRANIT, www.granit.unh.edu

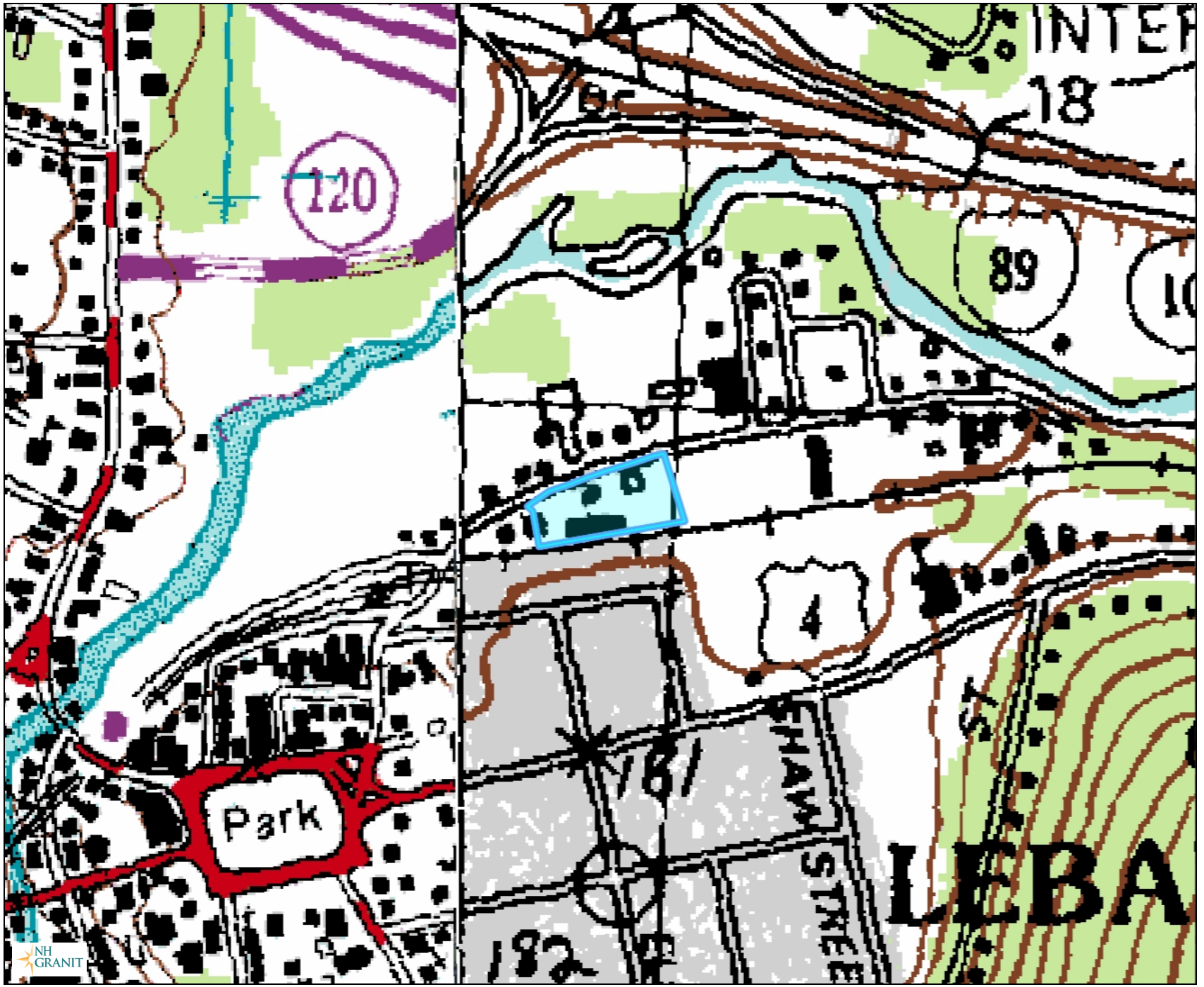
Map Generated: 8/9/2024

Notes

Aerial Map
TFM Project No 96202-01



The Muse Apartments



Legend

- State
- County
- City/Town

Map Scale

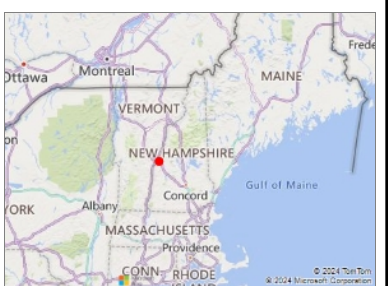
1: 5,000

© NH GRANIT, www.granit.unh.edu

Map Generated: 8/9/2024

Notes

USGS Map
TFM Project No 96202-01



Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	43.645 degrees North
Longitude	72.248 degrees West
Elevation	170 feet
Date/Time	Fri Jul 26 2024 14:24:35 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
1yr	0.26	0.40	0.50	0.66	0.82	1.02	**1yr**	0.71	0.93	1.17	1.44	1.76	2.15	2.42	**1yr**	1.90	2.32
2yr	0.31	0.48	0.59	0.78	0.98	1.22	**2yr**	0.85	1.11	1.39	1.70	2.07	2.50	2.81	**2yr**	2.21	2.70
5yr	0.37	0.57	0.71	0.96	1.22	1.53	**5yr**	1.06	1.40	1.76	2.14	2.57	3.07	3.48	**5yr**	2.72	3.34
10yr	0.41	0.65	0.82	1.12	1.45	1.83	**10yr**	1.25	1.67	2.10	2.54	3.03	3.59	4.08	**10yr**	3.17	3.93
25yr	0.49	0.78	0.99	1.37	1.82	2.30	**25yr**	1.57	2.11	2.64	3.18	3.77	4.41	5.05	**25yr**	3.90	4.86
50yr	0.56	0.90	1.15	1.61	2.16	2.75	**50yr**	1.87	2.51	3.15	3.78	4.45	5.15	5.94	**50yr**	4.56	5.71
100yr	0.64	1.03	1.33	1.88	2.57	3.28	**100yr**	2.22	3.00	3.76	4.49	5.25	6.03	6.99	**100yr**	5.34	6.72
200yr	0.73	1.20	1.55	2.22	3.06	3.90	**200yr**	2.64	3.59	4.47	5.33	6.19	7.06	8.23	**200yr**	6.25	7.91
500yr	0.88	1.45	1.89	2.75	3.85	4.92	**500yr**	3.32	4.54	5.63	6.68	7.70	8.70	10.21	**500yr**	7.70	9.81

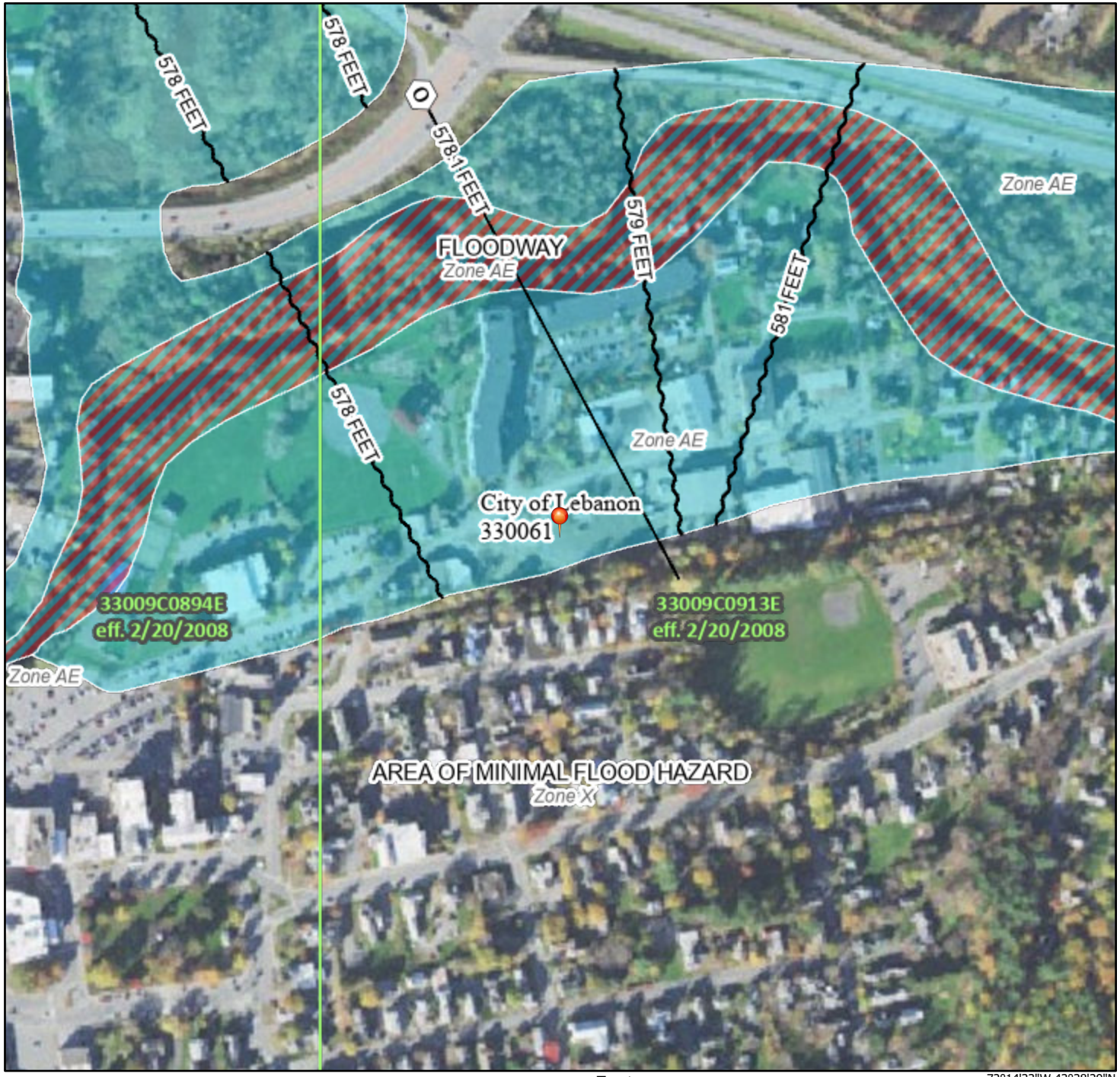
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2da
1yr	0.24	0.36	0.44	0.60	0.73	0.82	**1yr**	0.63	0.81	0.99	1.19	1.59	1.93	2.18	**1yr**	1.71	2.09

National Flood Hazard Layer FIRMette

FEMA

72°15'11"W 43°38'55"N



72°14'33"W 43°38'29"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/9/2024 at 2:06 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Grafton County, New Hampshire

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Grafton County, New Hampshire
Survey Area Data: Version 27, Aug 22, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 27, 2020—Sep 16, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Pootatuck very fine sandy loam	1.4	34.8%
26A	Windsor loamy sand, 0 to 3 percent slopes	1.2	29.1%
132A	Dartmouth silt loam, 0 to 3 percent slopes	0.1	2.9%
299	Udorthents, smoothed	1.3	33.3%
Totals for Area of Interest		**4.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Grafton County, New Hampshire

4—Pootatuck very fine sandy loam

Map Unit Setting

National map unit symbol: 9fjg
Elevation: 10 to 1,750 feet
Mean annual precipitation: 34 to 71 inches
Mean annual air temperature: 37 to 55 degrees F
Frost-free period: 80 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Pootatuck and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pootatuck

Setting

Parent material: Sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist

Typical profile

H1 - 0 to 7 inches: very fine sandy loam
H2 - 7 to 24 inches: fine sandy loam
H3 - 24 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F144AY012CT - Sandy Low Floodplain
Hydric soil rating: No

Minor Components

Occum

Percent of map unit: 3 percent
Hydric soil rating: No

Rippowam

Percent of map unit: 3 percent
Landform: Flood plains

Hydric soil rating: Yes

Sunday

Percent of map unit: 2 percent
Hydric soil rating: No

Not named

Percent of map unit: 2 percent
Hydric soil rating: No

26A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield, loamy sand
Percent of map unit: 10 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand
Percent of map unit: 5 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

132A—Dartmouth silt loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 9fg4
Elevation: 90 to 1,150 feet
Mean annual precipitation: 30 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 90 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Dartmouth and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dartmouth

Setting
Parent material: Glaciolacustrine

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 22 inches: very fine sandy loam
H3 - 22 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 13.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F145XY005MA - Moist Lake Plain
Hydric soil rating: No

Minor Components

Hitchcock

Percent of map unit: 8 percent
Hydric soil rating: No

Binghamville

Percent of map unit: 7 percent
Landform: Lake terraces
Hydric soil rating: Yes

299—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9fh6
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 55 degrees F
Frost-free period: 60 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Miscellaneous areas

Percent of map unit: 10 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

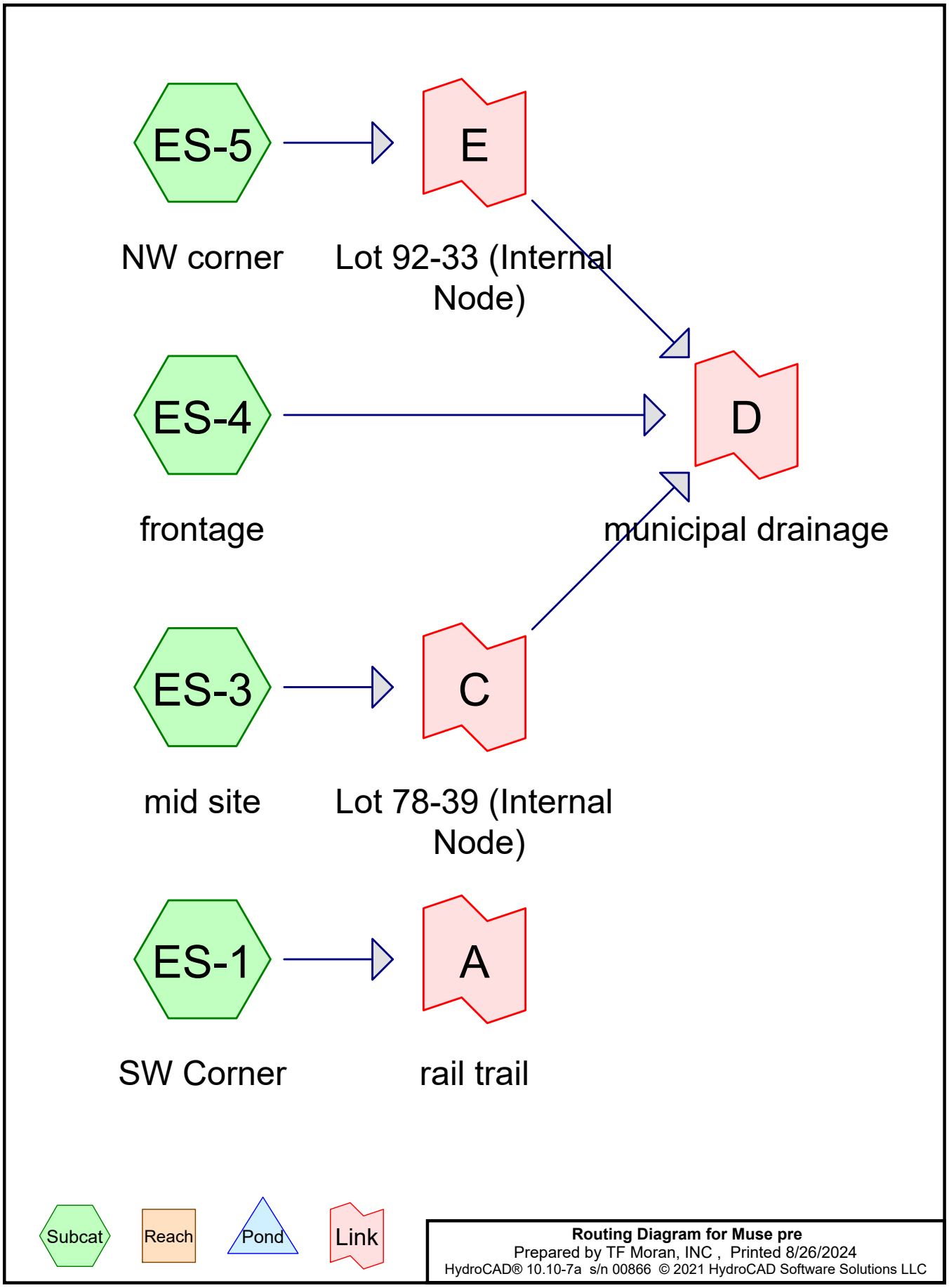
United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf


ES-5
E
NW corner
Lot 92-33 (Internal Node)
ES-4
D
frontage
municipal drainage
ES-3
C
mid site
Lot 78-39 (Internal Node)
ES-1
A
SW Corner
rail trail
Subcat
Reach
Pond
Link
Routing Diagram for Muse pre
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Muse pre
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-INCH	Type III 24-hr		Default	24.00	1	1.00	2
2	2-YR	Type III 24-hr		Default	24.00	1	2.50	2
3	25-YR	Type III 24-hr		Default	24.00	1	4.41	2
4	50-YR	Type III 24-hr		Default	24.00	1	5.15	2
5	100-YR	Type III 24-hr		Default	24.00	1	6.03	2

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
13,921	68	<50% Grass cover, Poor, HSG A (ES-1, ES-4)
2,984	79	<50% Grass cover, Poor, HSG B (ES-4)
26,406	96	Gravel surface, HSG A (ES-1, ES-3, ES-4, ES-5)
27,972	96	Gravel surface, HSG B (ES-1, ES-3, ES-4)
5,965	98	Paved parking, HSG A (ES-4, ES-5)
7,501	98	Paved parking, HSG B (ES-3, ES-4)
280	66	Woods, Poor, HSG B (ES-4)
85,029	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
46,292	HSG A	ES-1, ES-3, ES-4, ES-5
38,737	HSG B	ES-1, ES-3, ES-4
0	HSG C	
0	HSG D	
0	Other	
85,029		**TOTAL AREA**

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subc Num
13,921	2,984	0	0	0	16,905	<50% Grass cover, Poor	
26,406	27,972	0	0	0	54,378	Gravel surface	
5,965	7,501	0	0	0	13,466	Paved parking	
0	280	0	0	0	280	Woods, Poor	
46,292	**38,737**	**0**	**0**	**0**	**85,029**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES-1: SW Corner Runoff Area=33,262 sf 0.00% Impervious Runoff Depth>0.22"
Tc=6.0 min CN=87 Runoff=0.17 cfs 620 cf

Subcatchment ES-3: mid site Runoff Area=21,799 sf 9.40% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=96 Runoff=0.36 cfs 1,144 cf

Subcatchment ES-4: frontage Runoff Area=21,487 sf 41.48% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=90 Runoff=0.17 cfs 573 cf

Subcatchment ES-5: NW corner Runoff Area=8,481 sf 29.54% Impervious Runoff Depth>0.71"
Tc=6.0 min CN=97 Runoff=0.15 cfs 498 cf

Link A: rail trail Inflow=0.17 cfs 620 cf
Primary=0.17 cfs 620 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.36 cfs 1,144 cf
Primary=0.36 cfs 1,144 cf

Link D: municipal drainage Inflow=0.69 cfs 2,215 cf
Primary=0.69 cfs 2,215 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.15 cfs 498 cf
Primary=0.15 cfs 498 cf

Total Runoff Area = 85,029 sf Runoff Volume = 2,835 cf Average Runoff Depth = 0.40"
84.16% Pervious = 71,563 sf 15.84% Impervious = 13,466 sf

Summary for Subcatchment ES-1: SW Corner

Runoff = 0.17 cfs @ 12.11 hrs, Volume= 620 cf, Depth> 0.22"
Routed to Link A : rail trail

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
12,205	96	Gravel surface, HSG A
10,746	68	<50% Grass cover, Poor, HSG A
5,459	96	Gravel surface, HSG B
4,852	96	Gravel surface, HSG B
33,262	87	Weighted Average
33,262		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-3: mid site

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 1,144 cf, Depth> 0.63"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
6,488	96	Gravel surface, HSG A
13,262	96	Gravel surface, HSG B
2,049	98	Paved parking, HSG B
21,799	96	Weighted Average
19,750		90.60% Pervious Area
2,049		9.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-4: frontage

Runoff = 0.17 cfs @ 12.10 hrs, Volume= 573 cf, Depth> 0.32"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
1,737	96	Gravel surface, HSG A
3,460	98	Paved parking, HSG A
3,175	68	<50% Grass cover, Poor, HSG A
2,984	79	<50% Grass cover, Poor, HSG B
5,452	98	Paved parking, HSG B
4,399	96	Gravel surface, HSG B
280	66	Woods, Poor, HSG B
21,487	90	Weighted Average
12,575		58.52% Pervious Area
8,912		41.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-5: NW corner

Runoff = 0.15 cfs @ 12.09 hrs, Volume= 498 cf, Depth> 0.71"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
5,976	96	Gravel surface, HSG A
2,505	98	Paved parking, HSG A
8,481	97	Weighted Average
5,976		70.46% Pervious Area
2,505		29.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Link A: rail trail

Inflow Area = 33,262 sf, 0.00% Impervious, Inflow Depth > 0.22" for 1-INCH event
Inflow = 0.17 cfs @ 12.11 hrs, Volume= 620 cf
Primary = 0.17 cfs @ 12.11 hrs, Volume= 620 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 21,799 sf, 9.40% Impervious, Inflow Depth > 0.63" for 1-INCH event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 1,144 cf
Primary = 0.36 cfs @ 12.09 hrs, Volume= 1,144 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 51,767 sf, 26.01% Impervious, Inflow Depth > 0.51" for 1-INCH event
Inflow = 0.69 cfs @ 12.09 hrs, Volume= 2,215 cf
Primary = 0.69 cfs @ 12.09 hrs, Volume= 2,215 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 8,481 sf, 29.54% Impervious, Inflow Depth > 0.71" for 1-INCH event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 498 cf
Primary = 0.15 cfs @ 12.09 hrs, Volume= 498 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES-1: SW Corner Runoff Area=33,262 sf 0.00% Impervious Runoff Depth>1.31"
Tc=6.0 min CN=87 Runoff=1.15 cfs 3,631 cf

Subcatchment ES-3: mid site Runoff Area=21,799 sf 9.40% Impervious Runoff Depth>2.06"
Tc=6.0 min CN=96 Runoff=1.12 cfs 3,742 cf

Subcatchment ES-4: frontage Runoff Area=21,487 sf 41.48% Impervious Runoff Depth>1.53"
Tc=6.0 min CN=90 Runoff=0.87 cfs 2,739 cf

Subcatchment ES-5: NW corner Runoff Area=8,481 sf 29.54% Impervious Runoff Depth>2.16"
Tc=6.0 min CN=97 Runoff=0.45 cfs 1,528 cf

Link A: rail trail Inflow=1.15 cfs 3,631 cf
Primary=1.15 cfs 3,631 cf

Link C: Lot 78-39 (Internal Node) Inflow=1.12 cfs 3,742 cf
Primary=1.12 cfs 3,742 cf

Link D: municipal drainage Inflow=2.43 cfs 8,009 cf
Primary=2.43 cfs 8,009 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.45 cfs 1,528 cf
Primary=0.45 cfs 1,528 cf

Total Runoff Area = 85,029 sf Runoff Volume = 11,640 cf Average Runoff Depth = 1.64"
84.16% Pervious = 71,563 sf 15.84% Impervious = 13,466 sf

Summary for Subcatchment ES-1: SW Corner

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 3,631 cf, Depth> 1.31"
Routed to Link A : rail trail

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
12,205	96	Gravel surface, HSG A
10,746	68	<50% Grass cover, Poor, HSG A
5,459	96	Gravel surface, HSG B
4,852	96	Gravel surface, HSG B
33,262	87	Weighted Average
33,262		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-3: mid site

Runoff = 1.12 cfs @ 12.09 hrs, Volume= 3,742 cf, Depth> 2.06"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
6,488	96	Gravel surface, HSG A
13,262	96	Gravel surface, HSG B
2,049	98	Paved parking, HSG B
21,799	96	Weighted Average
19,750		90.60% Pervious Area
2,049		9.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-4: frontage

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 2,739 cf, Depth> 1.53"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
1,737	96	Gravel surface, HSG A
3,460	98	Paved parking, HSG A
3,175	68	<50% Grass cover, Poor, HSG A
2,984	79	<50% Grass cover, Poor, HSG B
5,452	98	Paved parking, HSG B
4,399	96	Gravel surface, HSG B
280	66	Woods, Poor, HSG B
21,487	90	Weighted Average
12,575		58.52% Pervious Area
8,912		41.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-5: NW corner

Runoff = 0.45 cfs @ 12.09 hrs, Volume= 1,528 cf, Depth> 2.16"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
5,976	96	Gravel surface, HSG A
2,505	98	Paved parking, HSG A
8,481	97	Weighted Average
5,976		70.46% Pervious Area
2,505		29.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Link A: rail trail

Inflow Area = 33,262 sf, 0.00% Impervious, Inflow Depth > 1.31" for 2-YR event
Inflow = 1.15 cfs @ 12.09 hrs, Volume= 3,631 cf
Primary = 1.15 cfs @ 12.09 hrs, Volume= 3,631 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 21,799 sf, 9.40% Impervious, Inflow Depth > 2.06" for 2-YR event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 3,742 cf
Primary = 1.12 cfs @ 12.09 hrs, Volume= 3,742 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 51,767 sf, 26.01% Impervious, Inflow Depth > 1.86" for 2-YR event
Inflow = 2.43 cfs @ 12.09 hrs, Volume= 8,009 cf
Primary = 2.43 cfs @ 12.09 hrs, Volume= 8,009 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 8,481 sf, 29.54% Impervious, Inflow Depth > 2.16" for 2-YR event
Inflow = 0.45 cfs @ 12.09 hrs, Volume= 1,528 cf
Primary = 0.45 cfs @ 12.09 hrs, Volume= 1,528 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES-1: SW Corner Runoff Area=33,262 sf 0.00% Impervious Runoff Depth>3.01"
Tc=6.0 min CN=87 Runoff=2.61 cfs 8,351 cf

Subcatchment ES-3: mid site Runoff Area=21,799 sf 9.40% Impervious Runoff Depth>3.94"
Tc=6.0 min CN=96 Runoff=2.06 cfs 7,165 cf

Subcatchment ES-4: frontage Runoff Area=21,487 sf 41.48% Impervious Runoff Depth>3.31"
Tc=6.0 min CN=90 Runoff=1.82 cfs 5,922 cf

Subcatchment ES-5: NW corner Runoff Area=8,481 sf 29.54% Impervious Runoff Depth>4.06"
Tc=6.0 min CN=97 Runoff=0.81 cfs 2,867 cf

Link A: rail trail Inflow=2.61 cfs 8,351 cf
Primary=2.61 cfs 8,351 cf

Link C: Lot 78-39 (Internal Node) Inflow=2.06 cfs 7,165 cf
Primary=2.06 cfs 7,165 cf

Link D: municipal drainage Inflow=4.69 cfs 15,954 cf
Primary=4.69 cfs 15,954 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.81 cfs 2,867 cf
Primary=0.81 cfs 2,867 cf

Total Runoff Area = 85,029 sf Runoff Volume = 24,305 cf Average Runoff Depth = 3.43"
84.16% Pervious = 71,563 sf 15.84% Impervious = 13,466 sf

Summary for Subcatchment ES-1: SW Corner

Runoff = 2.61 cfs @ 12.09 hrs, Volume= 8,351 cf, Depth> 3.01"
Routed to Link A : rail trail

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
12,205	96	Gravel surface, HSG A
10,746	68	<50% Grass cover, Poor, HSG A
5,459	96	Gravel surface, HSG B
4,852	96	Gravel surface, HSG B
33,262	87	Weighted Average
33,262		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-3: mid site

Runoff = 2.06 cfs @ 12.09 hrs, Volume= 7,165 cf, Depth> 3.94"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
6,488	96	Gravel surface, HSG A
13,262	96	Gravel surface, HSG B
2,049	98	Paved parking, HSG B
21,799	96	Weighted Average
19,750		90.60% Pervious Area
2,049		9.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-4: frontage

Runoff = 1.82 cfs @ 12.09 hrs, Volume= 5,922 cf, Depth> 3.31"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
1,737	96	Gravel surface, HSG A
3,460	98	Paved parking, HSG A
3,175	68	<50% Grass cover, Poor, HSG A
2,984	79	<50% Grass cover, Poor, HSG B
5,452	98	Paved parking, HSG B
4,399	96	Gravel surface, HSG B
280	66	Woods, Poor, HSG B
21,487	90	Weighted Average
12,575		58.52% Pervious Area
8,912		41.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-5: NW corner

Runoff = 0.81 cfs @ 12.09 hrs, Volume= 2,867 cf, Depth> 4.06"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
5,976	96	Gravel surface, HSG A
2,505	98	Paved parking, HSG A
8,481	97	Weighted Average
5,976		70.46% Pervious Area
2,505		29.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Link A: rail trail

Inflow Area = 33,262 sf, 0.00% Impervious, Inflow Depth > 3.01" for 25-YR event
Inflow = 2.61 cfs @ 12.09 hrs, Volume= 8,351 cf
Primary = 2.61 cfs @ 12.09 hrs, Volume= 8,351 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 21,799 sf, 9.40% Impervious, Inflow Depth > 3.94" for 25-YR event
Inflow = 2.06 cfs @ 12.09 hrs, Volume= 7,165 cf
Primary = 2.06 cfs @ 12.09 hrs, Volume= 7,165 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 51,767 sf, 26.01% Impervious, Inflow Depth > 3.70" for 25-YR event
Inflow = 4.69 cfs @ 12.09 hrs, Volume= 15,954 cf
Primary = 4.69 cfs @ 12.09 hrs, Volume= 15,954 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 8,481 sf, 29.54% Impervious, Inflow Depth > 4.06" for 25-YR event
Inflow = 0.81 cfs @ 12.09 hrs, Volume= 2,867 cf
Primary = 0.81 cfs @ 12.09 hrs, Volume= 2,867 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES-1: SW Corner Runoff Area=33,262 sf 0.00% Impervious Runoff Depth>3.71"
Tc=6.0 min CN=87 Runoff=3.18 cfs 10,272 cf

Subcatchment ES-3: mid site Runoff Area=21,799 sf 9.40% Impervious Runoff Depth>4.68"
Tc=6.0 min CN=96 Runoff=2.43 cfs 8,499 cf

Subcatchment ES-4: frontage Runoff Area=21,487 sf 41.48% Impervious Runoff Depth>4.02"
Tc=6.0 min CN=90 Runoff=2.19 cfs 7,195 cf

Subcatchment ES-5: NW corner Runoff Area=8,481 sf 29.54% Impervious Runoff Depth>4.79"
Tc=6.0 min CN=97 Runoff=0.95 cfs 3,388 cf

Link A: rail trail Inflow=3.18 cfs 10,272 cf
Primary=3.18 cfs 10,272 cf

Link C: Lot 78-39 (Internal Node) Inflow=2.43 cfs 8,499 cf
Primary=2.43 cfs 8,499 cf

Link D: municipal drainage Inflow=5.57 cfs 19,082 cf
Primary=5.57 cfs 19,082 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.95 cfs 3,388 cf
Primary=0.95 cfs 3,388 cf

Total Runoff Area = 85,029 sf Runoff Volume = 29,354 cf Average Runoff Depth = 4.14"
84.16% Pervious = 71,563 sf 15.84% Impervious = 13,466 sf

Summary for Subcatchment ES-1: SW Corner

Runoff = 3.18 cfs @ 12.09 hrs, Volume= 10,272 cf, Depth> 3.71"
Routed to Link A : rail trail

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
12,205	96	Gravel surface, HSG A
10,746	68	<50% Grass cover, Poor, HSG A
5,459	96	Gravel surface, HSG B
4,852	96	Gravel surface, HSG B
33,262	87	Weighted Average
33,262		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-3: mid site

Runoff = 2.43 cfs @ 12.09 hrs, Volume= 8,499 cf, Depth> 4.68"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
6,488	96	Gravel surface, HSG A
13,262	96	Gravel surface, HSG B
2,049	98	Paved parking, HSG B
21,799	96	Weighted Average
19,750		90.60% Pervious Area
2,049		9.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-4: frontage

Runoff = 2.19 cfs @ 12.09 hrs, Volume= 7,195 cf, Depth> 4.02"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
1,737	96	Gravel surface, HSG A
3,460	98	Paved parking, HSG A
3,175	68	<50% Grass cover, Poor, HSG A
2,984	79	<50% Grass cover, Poor, HSG B
5,452	98	Paved parking, HSG B
4,399	96	Gravel surface, HSG B
280	66	Woods, Poor, HSG B
21,487	90	Weighted Average
12,575		58.52% Pervious Area
8,912		41.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-5: NW corner

Runoff = 0.95 cfs @ 12.09 hrs, Volume= 3,388 cf, Depth> 4.79"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
5,976	96	Gravel surface, HSG A
2,505	98	Paved parking, HSG A
8,481	97	Weighted Average
5,976		70.46% Pervious Area
2,505		29.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Link A: rail trail

Inflow Area = 33,262 sf, 0.00% Impervious, Inflow Depth > 3.71" for 50-YR event
Inflow = 3.18 cfs @ 12.09 hrs, Volume= 10,272 cf
Primary = 3.18 cfs @ 12.09 hrs, Volume= 10,272 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 21,799 sf, 9.40% Impervious, Inflow Depth > 4.68" for 50-YR event
Inflow = 2.43 cfs @ 12.09 hrs, Volume= 8,499 cf
Primary = 2.43 cfs @ 12.09 hrs, Volume= 8,499 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 51,767 sf, 26.01% Impervious, Inflow Depth > 4.42" for 50-YR event
Inflow = 5.57 cfs @ 12.09 hrs, Volume= 19,082 cf
Primary = 5.57 cfs @ 12.09 hrs, Volume= 19,082 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 8,481 sf, 29.54% Impervious, Inflow Depth > 4.79" for 50-YR event
Inflow = 0.95 cfs @ 12.09 hrs, Volume= 3,388 cf
Primary = 0.95 cfs @ 12.09 hrs, Volume= 3,388 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES-1: SW Corner Runoff Area=33,262 sf 0.00% Impervious Runoff Depth>4.54"
Tc=6.0 min CN=87 Runoff=3.86 cfs 12,591 cf

Subcatchment ES-3: mid site Runoff Area=21,799 sf 9.40% Impervious Runoff Depth>5.55"
Tc=6.0 min CN=96 Runoff=2.85 cfs 10,089 cf

Subcatchment ES-4: frontage Runoff Area=21,487 sf 41.48% Impervious Runoff Depth>4.87"
Tc=6.0 min CN=90 Runoff=2.63 cfs 8,723 cf

Subcatchment ES-5: NW corner Runoff Area=8,481 sf 29.54% Impervious Runoff Depth>5.67"
Tc=6.0 min CN=97 Runoff=1.12 cfs 4,008 cf

Link A: rail trail Inflow=3.86 cfs 12,591 cf
Primary=3.86 cfs 12,591 cf

Link C: Lot 78-39 (Internal Node) Inflow=2.85 cfs 10,089 cf
Primary=2.85 cfs 10,089 cf

Link D: municipal drainage Inflow=6.60 cfs 22,820 cf
Primary=6.60 cfs 22,820 cf

Link E: Lot 92-33 (Internal Node) Inflow=1.12 cfs 4,008 cf
Primary=1.12 cfs 4,008 cf

Total Runoff Area = 85,029 sf Runoff Volume = 35,411 cf Average Runoff Depth = 5.00"
84.16% Pervious = 71,563 sf 15.84% Impervious = 13,466 sf

Summary for Subcatchment ES-1: SW Corner

Runoff = 3.86 cfs @ 12.09 hrs, Volume= 12,591 cf, Depth> 4.54"
Routed to Link A : rail trail

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
12,205	96	Gravel surface, HSG A
10,746	68	<50% Grass cover, Poor, HSG A
5,459	96	Gravel surface, HSG B
4,852	96	Gravel surface, HSG B
33,262	87	Weighted Average
33,262		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-3: mid site

Runoff = 2.85 cfs @ 12.09 hrs, Volume= 10,089 cf, Depth> 5.55"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
6,488	96	Gravel surface, HSG A
13,262	96	Gravel surface, HSG B
2,049	98	Paved parking, HSG B
21,799	96	Weighted Average
19,750		90.60% Pervious Area
2,049		9.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-4: frontage

Runoff = 2.63 cfs @ 12.09 hrs, Volume= 8,723 cf, Depth> 4.87"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
1,737	96	Gravel surface, HSG A
3,460	98	Paved parking, HSG A
3,175	68	<50% Grass cover, Poor, HSG A
2,984	79	<50% Grass cover, Poor, HSG B
5,452	98	Paved parking, HSG B
4,399	96	Gravel surface, HSG B
280	66	Woods, Poor, HSG B
21,487	90	Weighted Average
12,575		58.52% Pervious Area
8,912		41.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment ES-5: NW corner

Runoff = 1.12 cfs @ 12.09 hrs, Volume= 4,008 cf, Depth> 5.67"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
5,976	96	Gravel surface, HSG A
2,505	98	Paved parking, HSG A
8,481	97	Weighted Average
5,976		70.46% Pervious Area
2,505		29.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Link A: rail trail

Inflow Area = 33,262 sf, 0.00% Impervious, Inflow Depth > 4.54" for 100-YR event
Inflow = 3.86 cfs @ 12.09 hrs, Volume= 12,591 cf
Primary = 3.86 cfs @ 12.09 hrs, Volume= 12,591 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 21,799 sf, 9.40% Impervious, Inflow Depth > 5.55" for 100-YR event
Inflow = 2.85 cfs @ 12.09 hrs, Volume= 10,089 cf
Primary = 2.85 cfs @ 12.09 hrs, Volume= 10,089 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

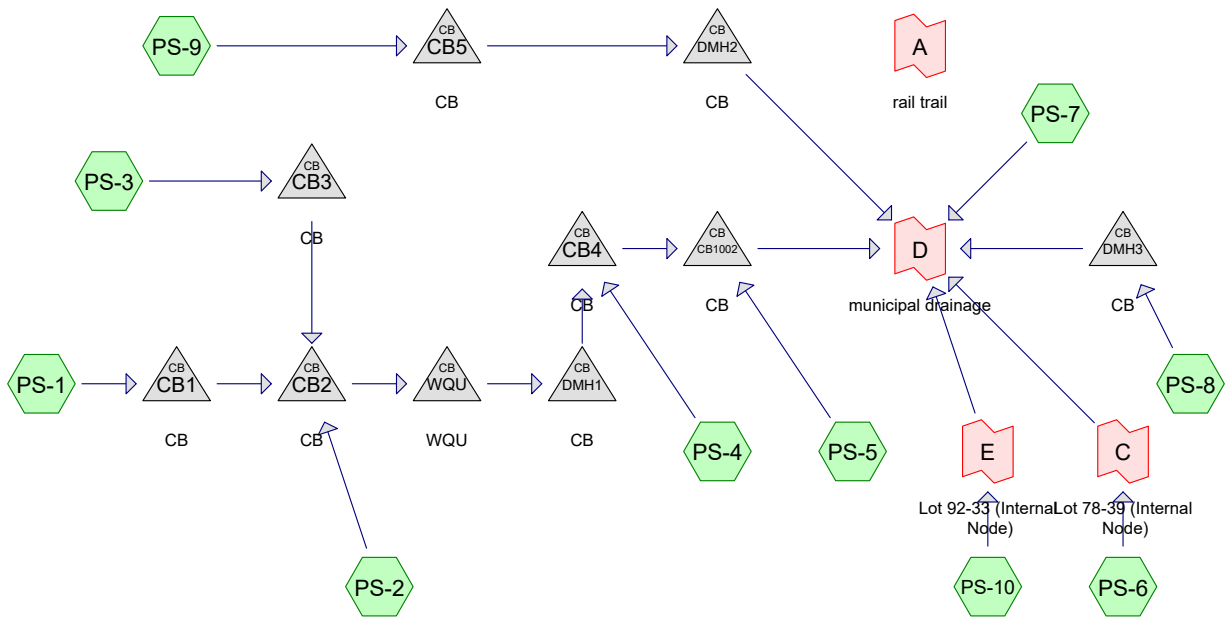
Inflow Area = 51,767 sf, 26.01% Impervious, Inflow Depth > 5.29" for 100-YR event
Inflow = 6.60 cfs @ 12.09 hrs, Volume= 22,820 cf
Primary = 6.60 cfs @ 12.09 hrs, Volume= 22,820 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 8,481 sf, 29.54% Impervious, Inflow Depth > 5.67" for 100-YR event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 4,008 cf
Primary = 1.12 cfs @ 12.09 hrs, Volume= 4,008 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for Muse post
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-INCH	Type III 24-hr		Default	24.00	1	1.00	2
2	2-YR	Type III 24-hr		Default	24.00	1	2.50	2
3	25-YR	Type III 24-hr		Default	24.00	1	4.41	2
4	50-YR	Type III 24-hr		Default	24.00	1	5.15	2
5	100-YR	Type III 24-hr		Default	24.00	1	6.03	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
13,395	39	>75% Grass cover, Good, HSG A (PS-1, PS-10, PS-2, PS-7, PS-9)
12,415	61	>75% Grass cover, Good, HSG B (PS-2, PS-3, PS-4, PS-5, PS-6, PS-7)
20,846	98	Paved parking, HSG A (PS-1, PS-10, PS-2, PS-7, PS-9)
19,513	98	Paved parking, HSG B (PS-2, PS-3, PS-4, PS-5, PS-7)
10,551	98	Roofs, HSG A (PS-8)
8,309	98	Roofs, HSG B (PS-8)
85,029	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
44,792	HSG A	PS-1, PS-10, PS-2, PS-7, PS-8, PS-9
40,237	HSG B	PS-2, PS-3, PS-4, PS-5, PS-6, PS-7, PS-8
0	HSG C	
0	HSG D	
0	Other	
85,029		**TOTAL AREA**

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
13,395	12,415	0	0	0	25,810	>75% Grass cover, Good	
20,846	19,513	0	0	0	40,359	Paved parking	
10,551	8,309	0	0	0	18,860	Roofs	
44,792	**40,237**	**0**	**0**	**0**	**85,029**	**TOTAL AREA**	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	CB1	573.00	572.06	103.4	0.0091	0.013	0.0	12.0	0.0
2	CB1002	571.32	571.19	33.4	0.0039	0.013	0.0	12.0	0.0
3	CB2	571.96	571.86	20.5	0.0049	0.013	0.0	12.0	0.0
4	CB3	572.43	572.16	59.8	0.0045	0.013	0.0	12.0	0.0
5	CB4	571.50	571.14	83.0	0.0043	0.013	0.0	12.0	0.0
6	CB5	575.53	575.30	51.0	0.0045	0.013	0.0	12.0	0.0
7	DMH1	571.58	571.55	77.0	0.0004	0.013	0.0	12.0	0.0
8	DMH2	575.20	574.82	49.0	0.0078	0.013	0.0	12.0	0.0
9	DMH3	573.00	572.75	10.0	0.0250	0.013	0.0	12.0	0.0
10	WQU	571.66	571.63	3.0	0.0100	0.013	0.0	12.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-1: Runoff Area=12,485 sf 73.96% Impervious Runoff Depth>0.13"
Tc=6.0 min CN=83 Runoff=0.03 cfs 137 cf

Subcatchment PS-10: Runoff Area=2,140 sf 59.91% Impervious Runoff Depth>0.02"
Tc=6.0 min CN=74 Runoff=0.00 cfs 4 cf

Subcatchment PS-2: Runoff Area=15,154 sf 70.06% Impervious Runoff Depth>0.15"
Tc=6.0 min CN=84 Runoff=0.04 cfs 191 cf

Subcatchment PS-3: Runoff Area=3,232 sf 9.44% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=64 Runoff=0.00 cfs 0 cf

Subcatchment PS-4: Runoff Area=8,705 sf 64.56% Impervious Runoff Depth>0.17"
Tc=6.0 min CN=85 Runoff=0.03 cfs 126 cf

Subcatchment PS-5: Runoff Area=2,931 sf 81.13% Impervious Runoff Depth>0.36"
Tc=6.0 min CN=91 Runoff=0.03 cfs 88 cf

Subcatchment PS-6: Runoff Area=534 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=61 Runoff=0.00 cfs 0 cf

Subcatchment PS-7: Runoff Area=14,042 sf 67.87% Impervious Runoff Depth>0.13"
Tc=6.0 min CN=83 Runoff=0.03 cfs 154 cf

Subcatchment PS-8: Runoff Area=18,860 sf 100.00% Impervious Runoff Depth>0.79"
Tc=6.0 min CN=98 Runoff=0.38 cfs 1,242 cf

Subcatchment PS-9: Runoff Area=6,946 sf 20.05% Impervious Runoff Depth=0.00"
Tc=0.0 min CN=51 Runoff=0.00 cfs 0 cf

Pond CB1: CB Peak Elev=573.08' Inflow=0.03 cfs 137 cf
12.0" Round Culvert n=0.013 L=103.4' S=0.0091 '/' Outflow=0.03 cfs 137 cf

Pond CB1002: CB Peak Elev=571.53' Inflow=0.12 cfs 542 cf
12.0" Round Culvert n=0.013 L=33.4' S=0.0039 '/' Outflow=0.12 cfs 542 cf

Pond CB2: CB Peak Elev=572.11' Inflow=0.07 cfs 329 cf
12.0" Round Culvert n=0.013 L=20.5' S=0.0049 '/' Outflow=0.07 cfs 329 cf

Pond CB3: CB Peak Elev=572.43' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.013 L=59.8' S=0.0045 '/' Outflow=0.00 cfs 0 cf

Pond CB4: CB Peak Elev=571.72' Inflow=0.10 cfs 454 cf
12.0" Round Culvert n=0.013 L=83.0' S=0.0043 '/' Outflow=0.10 cfs 454 cf

Pond CB5: CB Peak Elev=575.53' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.013 L=51.0' S=0.0045 '/' Outflow=0.00 cfs 0 cf

Pond DMH1: CB Peak Elev=571.81' Inflow=0.07 cfs 329 cf
12.0" Round Culvert n=0.013 L=77.0' S=0.0004 '/' Outflow=0.07 cfs 329 cf

Pond DMH2: CB Peak Elev=575.20' Inflow=0.00 cfs 0 cf
12.0" Round Culvert n=0.013 L=49.0' S=0.0078 '/' Outflow=0.00 cfs 0 cf

Pond DMH3: CB Peak Elev=573.30' Inflow=0.38 cfs 1,242 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0250 '/' Outflow=0.38 cfs 1,242 cf

Pond WQU: WQU Peak Elev=571.84' Inflow=0.07 cfs 329 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0100 '/' Outflow=0.07 cfs 329 cf

Link A: rail trail
Primary=0.00 cfs 0 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link D: municipal drainage Inflow=0.52 cfs 1,943 cf
Primary=0.52 cfs 1,943 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.00 cfs 4 cf
Primary=0.00 cfs 4 cf

Total Runoff Area = 85,029 sf Runoff Volume = 1,943 cf Average Runoff Depth = 0.27"
30.35% Pervious = 25,810 sf 69.65% Impervious = 59,219 sf

Summary for Subcatchment PS-1:

Runoff = 0.03 cfs @ 12.14 hrs, Volume= 137 cf, Depth> 0.13"
Routed to Pond CB1 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
9,234	98	Paved parking, HSG A
3,251	39	>75% Grass cover, Good, HSG A
12,485	83	Weighted Average
3,251		26.04% Pervious Area
9,234		73.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-10:

Runoff = 0.00 cfs @ 14.78 hrs, Volume= 4 cf, Depth> 0.02"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
858	39	>75% Grass cover, Good, HSG A
1,282	98	Paved parking, HSG A
2,140	74	Weighted Average
858		40.09% Pervious Area
1,282		59.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-2:

Runoff = 0.04 cfs @ 12.12 hrs, Volume= 191 cf, Depth> 0.15"
Routed to Pond CB2 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
5,357	98	Paved parking, HSG A
1,919	39	>75% Grass cover, Good, HSG A
449	98	Paved parking, HSG A
2,618	61	>75% Grass cover, Good, HSG B
4,377	98	Paved parking, HSG B
434	98	Paved parking, HSG B
15,154	84	Weighted Average
4,537		29.94% Pervious Area
10,617		70.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-3:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond CB3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
2,927	61	>75% Grass cover, Good, HSG B
305	98	Paved parking, HSG B
3,232	64	Weighted Average
2,927		90.56% Pervious Area
305		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-4:

Runoff = 0.03 cfs @ 12.12 hrs, Volume= 126 cf, Depth> 0.17"
Routed to Pond CB4 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
3,085	61	>75% Grass cover, Good, HSG B
5,620	98	Paved parking, HSG B
8,705	85	Weighted Average
3,085		35.44% Pervious Area
5,620		64.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-5:

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 88 cf, Depth> 0.36"
Routed to Pond CB1002 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
553	61	>75% Grass cover, Good, HSG B
2,378	98	Paved parking, HSG B
2,931	91	Weighted Average
553		18.87% Pervious Area
2,378		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-6:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
534	61	>75% Grass cover, Good, HSG B
534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-7:

Runoff = 0.03 cfs @ 12.14 hrs, Volume= 154 cf, Depth> 0.13"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
6,399	98	Paved parking, HSG B
3,131	98	Paved parking, HSG A
1,814	39	>75% Grass cover, Good, HSG A
2,698	61	>75% Grass cover, Good, HSG B
14,042	83	Weighted Average
4,512		32.13% Pervious Area
9,530		67.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-8:

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 1,242 cf, Depth> 0.79"
Routed to Pond DMH3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
8,309	98	Roofs, HSG B
10,551	98	Roofs, HSG A
18,860	98	Weighted Average
18,860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-9:

[46] Hint: Tc=0 (Instant runoff peak depends on dt)
[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond CB5 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-INCH Rainfall=1.00"

Area (sf)	CN	Description
5,553	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG A
6,946	51	Weighted Average
5,553		79.95% Pervious Area
1,393		20.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					**Direct Entry, 6**

Summary for Pond CB1: CB

Inflow Area = 12,485 sf, 73.96% Impervious, Inflow Depth > 0.13" for 1-INCH event
Inflow = 0.03 cfs @ 12.14 hrs, Volume= 137 cf
Outflow = 0.03 cfs @ 12.14 hrs, Volume= 137 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 12.14 hrs, Volume= 137 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.08' @ 12.14 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 103.4' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.06' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.03 cfs @ 12.14 hrs HW=573.08' TW=572.11' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.03 cfs @ 1.26 fps)

Summary for Pond CB1002: CB

Inflow Area = 42,507 sf, 66.23% Impervious, Inflow Depth > 0.15" for 1-INCH event
Inflow = 0.12 cfs @ 12.12 hrs, Volume= 542 cf
Outflow = 0.12 cfs @ 12.12 hrs, Volume= 542 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.12 hrs, Volume= 542 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 571.53' @ 12.12 hrs
Flood Elev= 574.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.32'	**12.0" Round Culvert** L= 33.4' Ke= 0.500 Inlet / Outlet Invert= 571.32' / 571.19' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.12 cfs @ 12.12 hrs HW=571.53' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.12 cfs @ 1.50 fps)

Summary for Pond CB2: CB

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 0.13" for 1-INCH event
Inflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Outflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Routed to Pond WQU : WQU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.11' @ 12.12 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.96'	**12.0" Round Culvert** L= 20.5' Ke= 0.500 Inlet / Outlet Invert= 571.96' / 571.86' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.06 cfs @ 12.12 hrs HW=572.11' TW=571.82' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.06 cfs @ 1.34 fps)

Summary for Pond CB3: CB

Inflow Area = 3,232 sf, 9.44% Impervious, Inflow Depth = 0.00" for 1-INCH event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.43' @ 0.00 hrs
Flood Elev= 576.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	572.43'	**12.0" Round Culvert** L= 59.8' Ke= 0.500 Inlet / Outlet Invert= 572.43' / 572.16' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=572.43' TW=571.96' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB

Inflow Area = 39,576 sf, 65.13% Impervious, Inflow Depth > 0.14" for 1-INCH event
Inflow = 0.10 cfs @ 12.12 hrs, Volume= 454 cf
Outflow = 0.10 cfs @ 12.12 hrs, Volume= 454 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 12.12 hrs, Volume= 454 cf
Routed to Pond CB1002 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 571.72' @ 12.14 hrs
Flood Elev= 574.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Culvert** L= 83.0' Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.14' S= 0.0043 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 12.12 hrs HW=571.72' TW=571.53' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.09 cfs @ 1.08 fps)

Summary for Pond CB5: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth = 0.00" for 1-INCH event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond DMH2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.53' @ 0.00 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.53'	**12.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 575.53' / 575.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.53' TW=575.20' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH1: CB

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 0.13" for 1-INCH event
Inflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Outflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Routed to Pond CB4 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 571.81' @ 12.12 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.58'	**12.0" Round Culvert** L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 571.58' / 571.55' S= 0.0004 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.06 cfs @ 12.12 hrs HW=571.80' TW=571.72' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.06 cfs @ 0.75 fps)

Summary for Pond DMH2: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth = 0.00" for 1-INCH event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.20' @ 0.00 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.20'	**12.0" Round Culvert** L= 49.0' Ke= 0.500 Inlet / Outlet Invert= 575.20' / 574.82' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=575.20' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH3: CB

Inflow Area = 18,860 sf,100.00% Impervious, Inflow Depth > 0.79" for 1-INCH event
Inflow = 0.38 cfs @ 12.09 hrs, Volume= 1,242 cf
Outflow = 0.38 cfs @ 12.09 hrs, Volume= 1,242 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.09 hrs, Volume= 1,242 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.30' @ 12.09 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.75' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.09 hrs HW=573.30' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 0.37 cfs @ 1.86 fps)

Summary for Pond WQU: WQU

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 0.13" for 1-INCH event
Inflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Outflow = 0.07 cfs @ 12.12 hrs, Volume= 329 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.12 hrs, Volume= 329 cf
Routed to Pond DMH1 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 571.84' @ 12.16 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.66'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 571.66' / 571.63' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 12.12 hrs HW=571.82' TW=571.80' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.05 cfs @ 0.87 fps)

Summary for Link A: rail trail

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 534 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1-INCH event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 85,029 sf, 69.65% Impervious, Inflow Depth > 0.27" for 1-INCH event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 1,943 cf
Primary = 0.52 cfs @ 12.10 hrs, Volume= 1,943 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 2,140 sf, 59.91% Impervious, Inflow Depth > 0.02" for 1-INCH event
Inflow = 0.00 cfs @ 14.78 hrs, Volume= 4 cf
Primary = 0.00 cfs @ 14.78 hrs, Volume= 4 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-1: Runoff Area=12,485 sf 73.96% Impervious Runoff Depth>1.05"
Tc=6.0 min CN=83 Runoff=0.34 cfs 1,097 cf

Subcatchment PS-10: Runoff Area=2,140 sf 59.91% Impervious Runoff Depth>0.61"
Tc=6.0 min CN=74 Runoff=0.03 cfs 108 cf

Subcatchment PS-2: Runoff Area=15,154 sf 70.06% Impervious Runoff Depth>1.11"
Tc=6.0 min CN=84 Runoff=0.44 cfs 1,408 cf

Subcatchment PS-3: Runoff Area=3,232 sf 9.44% Impervious Runoff Depth>0.27"
Tc=6.0 min CN=64 Runoff=0.01 cfs 73 cf

Subcatchment PS-4: Runoff Area=8,705 sf 64.56% Impervious Runoff Depth>1.18"
Tc=6.0 min CN=85 Runoff=0.27 cfs 854 cf

Subcatchment PS-5: Runoff Area=2,931 sf 81.13% Impervious Runoff Depth>1.61"
Tc=6.0 min CN=91 Runoff=0.12 cfs 393 cf

Subcatchment PS-6: Runoff Area=534 sf 0.00% Impervious Runoff Depth>0.20"
Tc=6.0 min CN=61 Runoff=0.00 cfs 9 cf

Subcatchment PS-7: Runoff Area=14,042 sf 67.87% Impervious Runoff Depth>1.05"
Tc=6.0 min CN=83 Runoff=0.39 cfs 1,234 cf

Subcatchment PS-8: Runoff Area=18,860 sf 100.00% Impervious Runoff Depth>2.27"
Tc=6.0 min CN=98 Runoff=1.02 cfs 3,567 cf

Subcatchment PS-9: Runoff Area=6,946 sf 20.05% Impervious Runoff Depth>0.03"
Tc=0.0 min CN=51 Runoff=0.00 cfs 19 cf

Pond CB1: CB Peak Elev=573.31' Inflow=0.34 cfs 1,097 cf
12.0" Round Culvert n=0.013 L=103.4' S=0.0091 '/' Outflow=0.34 cfs 1,097 cf

Pond CB1002: CB Peak Elev=572.03' Inflow=1.19 cfs 3,825 cf
12.0" Round Culvert n=0.013 L=33.4' S=0.0039 '/' Outflow=1.19 cfs 3,825 cf

Pond CB2: CB Peak Elev=572.51' Inflow=0.80 cfs 2,578 cf
12.0" Round Culvert n=0.013 L=20.5' S=0.0049 '/' Outflow=0.80 cfs 2,578 cf

Pond CB3: CB Peak Elev=572.54' Inflow=0.01 cfs 73 cf
12.0" Round Culvert n=0.013 L=59.8' S=0.0045 '/' Outflow=0.01 cfs 73 cf

Pond CB4: CB Peak Elev=572.28' Inflow=1.07 cfs 3,432 cf
12.0" Round Culvert n=0.013 L=83.0' S=0.0043 '/' Outflow=1.07 cfs 3,432 cf

Pond CB5: CB Peak Elev=575.55' Inflow=0.00 cfs 19 cf
12.0" Round Culvert n=0.013 L=51.0' S=0.0045 '/' Outflow=0.00 cfs 19 cf

Pond DMH1: CB Peak Elev=572.38' Inflow=0.80 cfs 2,578 cf
12.0" Round Culvert n=0.013 L=77.0' S=0.0004 '/' Outflow=0.80 cfs 2,578 cf

Pond DMH2: CB Peak Elev=575.22' Inflow=0.00 cfs 19 cf
12.0" Round Culvert n=0.013 L=49.0' S=0.0078 '/' Outflow=0.00 cfs 19 cf

Pond DMH3: CB Peak Elev=573.52' Inflow=1.02 cfs 3,567 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0250 '/' Outflow=1.02 cfs 3,567 cf

Pond WQU: WQU Peak Elev=572.41' Inflow=0.80 cfs 2,578 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0100 '/' Outflow=0.80 cfs 2,578 cf

Link A: rail trail
Primary=0.00 cfs 0 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.00 cfs 9 cf
Primary=0.00 cfs 9 cf

Link D: municipal drainage Inflow=2.62 cfs 8,762 cf
Primary=2.62 cfs 8,762 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.03 cfs 108 cf
Primary=0.03 cfs 108 cf

Total Runoff Area = 85,029 sf Runoff Volume = 8,762 cf Average Runoff Depth = 1.24"
30.35% Pervious = 25,810 sf 69.65% Impervious = 59,219 sf

Summary for Subcatchment PS-1:

Runoff = 0.34 cfs @ 12.10 hrs, Volume= 1,097 cf, Depth> 1.05"
Routed to Pond CB1 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
9,234	98	Paved parking, HSG A
3,251	39	>75% Grass cover, Good, HSG A
12,485	83	Weighted Average
3,251		26.04% Pervious Area
9,234		73.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-10:

Runoff = 0.03 cfs @ 12.11 hrs, Volume= 108 cf, Depth> 0.61"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
858	39	>75% Grass cover, Good, HSG A
1,282	98	Paved parking, HSG A
2,140	74	Weighted Average
858		40.09% Pervious Area
1,282		59.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-2:

Runoff = 0.44 cfs @ 12.10 hrs, Volume= 1,408 cf, Depth> 1.11"
Routed to Pond CB2 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
5,357	98	Paved parking, HSG A
1,919	39	>75% Grass cover, Good, HSG A
449	98	Paved parking, HSG A
2,618	61	>75% Grass cover, Good, HSG B
4,377	98	Paved parking, HSG B
434	98	Paved parking, HSG B
15,154	84	Weighted Average
4,537		29.94% Pervious Area
10,617		70.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-3:

Runoff = 0.01 cfs @ 12.16 hrs, Volume= 73 cf, Depth> 0.27"
Routed to Pond CB3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
2,927	61	>75% Grass cover, Good, HSG B
305	98	Paved parking, HSG B
3,232	64	Weighted Average
2,927		90.56% Pervious Area
305		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-4:

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 854 cf, Depth> 1.18"
Routed to Pond CB4 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
3,085	61	>75% Grass cover, Good, HSG B
5,620	98	Paved parking, HSG B
8,705	85	Weighted Average
3,085		35.44% Pervious Area
5,620		64.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-5:

Runoff = 0.12 cfs @ 12.09 hrs, Volume= 393 cf, Depth> 1.61"
Routed to Pond CB1002 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
553	61	>75% Grass cover, Good, HSG B
2,378	98	Paved parking, HSG B
2,931	91	Weighted Average
553		18.87% Pervious Area
2,378		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-6:

Runoff = 0.00 cfs @ 12.33 hrs, Volume= 9 cf, Depth> 0.20"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
534	61	>75% Grass cover, Good, HSG B
534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-7:

Runoff = 0.39 cfs @ 12.10 hrs, Volume= 1,234 cf, Depth> 1.05"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
6,399	98	Paved parking, HSG B
3,131	98	Paved parking, HSG A
1,814	39	>75% Grass cover, Good, HSG A
2,698	61	>75% Grass cover, Good, HSG B
14,042	83	Weighted Average
4,512		32.13% Pervious Area
9,530		67.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-8:

Runoff = 1.02 cfs @ 12.09 hrs, Volume= 3,567 cf, Depth> 2.27"
Routed to Pond DMH3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
8,309	98	Roofs, HSG B
10,551	98	Roofs, HSG A
18,860	98	Weighted Average
18,860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-9:

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.00 cfs @ 15.31 hrs, Volume= 19 cf, Depth> 0.03"
Routed to Pond CB5 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=2.50"

Area (sf)	CN	Description
5,553	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG A
6,946	51	Weighted Average
5,553		79.95% Pervious Area
1,393		20.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					**Direct Entry, 6**

Summary for Pond CB1: CB

Inflow Area = 12,485 sf, 73.96% Impervious, Inflow Depth > 1.05" for 2-YR event
Inflow = 0.34 cfs @ 12.10 hrs, Volume= 1,097 cf
Outflow = 0.34 cfs @ 12.10 hrs, Volume= 1,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.10 hrs, Volume= 1,097 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.31' @ 12.10 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 103.4' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.06' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.10 hrs HW=573.31' TW=572.51' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.33 cfs @ 2.42 fps)

Summary for Pond CB1002: CB

Inflow Area = 42,507 sf, 66.23% Impervious, Inflow Depth > 1.08" for 2-YR event
Inflow = 1.19 cfs @ 12.10 hrs, Volume= 3,825 cf
Outflow = 1.19 cfs @ 12.10 hrs, Volume= 3,825 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.19 cfs @ 12.10 hrs, Volume= 3,825 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.03' @ 12.10 hrs
Flood Elev= 574.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.32'	**12.0" Round Culvert** L= 33.4' Ke= 0.500 Inlet / Outlet Invert= 571.32' / 571.19' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.17 cfs @ 12.10 hrs HW=572.02' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.17 cfs @ 2.80 fps)

Summary for Pond CB2: CB

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 1.00" for 2-YR event
Inflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Outflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Routed to Pond WQU : WQU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.51' @ 12.12 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.96'	**12.0" Round Culvert** L= 20.5' Ke= 0.500 Inlet / Outlet Invert= 571.96' / 571.86' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.68 cfs @ 12.10 hrs HW=572.51' TW=572.33' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.68 cfs @ 2.24 fps)

Summary for Pond CB3: CB

Inflow Area = 3,232 sf, 9.44% Impervious, Inflow Depth > 0.27" for 2-YR event
Inflow = 0.01 cfs @ 12.16 hrs, Volume= 73 cf
Outflow = 0.01 cfs @ 12.16 hrs, Volume= 73 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.01 cfs @ 12.16 hrs, Volume= 73 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.54' @ 12.17 hrs
Flood Elev= 576.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	572.43'	**12.0" Round Culvert** L= 59.8' Ke= 0.500 Inlet / Outlet Invert= 572.43' / 572.16' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.16 hrs HW=572.54' TW=572.50' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.01 cfs @ 0.37 fps)

Summary for Pond CB4: CB

Inflow Area = 39,576 sf, 65.13% Impervious, Inflow Depth > 1.04" for 2-YR event
Inflow = 1.07 cfs @ 12.10 hrs, Volume= 3,432 cf
Outflow = 1.07 cfs @ 12.10 hrs, Volume= 3,432 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.07 cfs @ 12.10 hrs, Volume= 3,432 cf
Routed to Pond CB1002 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.28' @ 12.12 hrs
Flood Elev= 574.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Culvert** L= 83.0' Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.14' S= 0.0043 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.95 cfs @ 12.10 hrs HW=572.27' TW=572.02' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.95 cfs @ 2.03 fps)

Summary for Pond CB5: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.03" for 2-YR event
Inflow = 0.00 cfs @ 15.31 hrs, Volume= 19 cf
Outflow = 0.00 cfs @ 15.31 hrs, Volume= 19 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 15.31 hrs, Volume= 19 cf
Routed to Pond DMH2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.55' @ 15.31 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.53'	**12.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 575.53' / 575.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 15.31 hrs HW=575.55' TW=575.22' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.00 cfs @ 0.33 fps)

Summary for Pond DMH1: CB

[80] Warning: Exceeded Pond WQU by 0.01' @ 12.05 hrs (0.22 cfs 76 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 1.00" for 2-YR event
Inflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Outflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Routed to Pond CB4 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.38' @ 12.14 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.58'	**12.0" Round Culvert** L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 571.58' / 571.55' S= 0.0004 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.50 cfs @ 12.10 hrs HW=572.34' TW=572.27' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.50 cfs @ 1.09 fps)

Summary for Pond DMH2: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.03" for 2-YR event
Inflow = 0.00 cfs @ 15.31 hrs, Volume= 19 cf
Outflow = 0.00 cfs @ 15.31 hrs, Volume= 19 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 15.31 hrs, Volume= 19 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.22' @ 15.31 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.20'	**12.0" Round Culvert** L= 49.0' Ke= 0.500 Inlet / Outlet Invert= 575.20' / 574.82' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 15.31 hrs HW=575.22' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.00 cfs @ 0.39 fps)

Summary for Pond DMH3: CB

Inflow Area = 18,860 sf,100.00% Impervious, Inflow Depth > 2.27" for 2-YR event
Inflow = 1.02 cfs @ 12.09 hrs, Volume= 3,567 cf
Outflow = 1.02 cfs @ 12.09 hrs, Volume= 3,567 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.09 hrs, Volume= 3,567 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.52' @ 12.09 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.75' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 12.09 hrs HW=573.51' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.99 cfs @ 2.44 fps)

Summary for Pond WQU: WQU

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 1.00" for 2-YR event
Inflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Outflow = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.10 hrs, Volume= 2,578 cf
Routed to Pond DMH1 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 572.41' @ 12.18 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.66'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 571.66' / 571.63' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=572.33' TW=572.34' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Link A: rail trail

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 534 sf, 0.00% Impervious, Inflow Depth > 0.20" for 2-YR event
Inflow = 0.00 cfs @ 12.33 hrs, Volume= 9 cf
Primary = 0.00 cfs @ 12.33 hrs, Volume= 9 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 85,029 sf, 69.65% Impervious, Inflow Depth > 1.24" for 2-YR event
Inflow = 2.62 cfs @ 12.09 hrs, Volume= 8,762 cf
Primary = 2.62 cfs @ 12.09 hrs, Volume= 8,762 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 2,140 sf, 59.91% Impervious, Inflow Depth > 0.61" for 2-YR event
Inflow = 0.03 cfs @ 12.11 hrs, Volume= 108 cf
Primary = 0.03 cfs @ 12.11 hrs, Volume= 108 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-1: Runoff Area=12,485 sf 73.96% Impervious Runoff Depth>2.64"
Tc=6.0 min CN=83 Runoff=0.87 cfs 2,750 cf

Subcatchment PS-10: Runoff Area=2,140 sf 59.91% Impervious Runoff Depth>1.90"
Tc=6.0 min CN=74 Runoff=0.11 cfs 339 cf

Subcatchment PS-2: Runoff Area=15,154 sf 70.06% Impervious Runoff Depth>2.73"
Tc=6.0 min CN=84 Runoff=1.09 cfs 3,452 cf

Subcatchment PS-3: Runoff Area=3,232 sf 9.44% Impervious Runoff Depth>1.21"
Tc=6.0 min CN=64 Runoff=0.09 cfs 326 cf

Subcatchment PS-4: Runoff Area=8,705 sf 64.56% Impervious Runoff Depth>2.82"
Tc=6.0 min CN=85 Runoff=0.65 cfs 2,049 cf

Subcatchment PS-5: Runoff Area=2,931 sf 81.13% Impervious Runoff Depth>3.41"
Tc=6.0 min CN=91 Runoff=0.25 cfs 833 cf

Subcatchment PS-6: Runoff Area=534 sf 0.00% Impervious Runoff Depth>1.03"
Tc=6.0 min CN=61 Runoff=0.01 cfs 46 cf

Subcatchment PS-7: Runoff Area=14,042 sf 67.87% Impervious Runoff Depth>2.64"
Tc=6.0 min CN=83 Runoff=0.98 cfs 3,093 cf

Subcatchment PS-8: Runoff Area=18,860 sf 100.00% Impervious Runoff Depth>4.17"
Tc=6.0 min CN=98 Runoff=1.82 cfs 6,556 cf

Subcatchment PS-9: Runoff Area=6,946 sf 20.05% Impervious Runoff Depth>0.51"
Tc=0.0 min CN=51 Runoff=0.06 cfs 296 cf

Pond CB1: CB Peak Elev=573.81' Inflow=0.87 cfs 2,750 cf
12.0" Round Culvert n=0.013 L=103.4' S=0.0091 '/' Outflow=0.87 cfs 2,750 cf

Pond CB1002: CB Peak Elev=572.75' Inflow=2.95 cfs 9,410 cf
12.0" Round Culvert n=0.013 L=33.4' S=0.0039 '/' Outflow=2.95 cfs 9,410 cf

Pond CB2: CB Peak Elev=573.77' Inflow=2.05 cfs 6,528 cf
12.0" Round Culvert n=0.013 L=20.5' S=0.0049 '/' Outflow=2.05 cfs 6,528 cf

Pond CB3: CB Peak Elev=573.77' Inflow=0.09 cfs 326 cf
12.0" Round Culvert n=0.013 L=59.8' S=0.0045 '/' Outflow=0.09 cfs 326 cf

Pond CB4: CB Peak Elev=573.36' Inflow=2.70 cfs 8,577 cf
12.0" Round Culvert n=0.013 L=83.0' S=0.0043 '/' Outflow=2.70 cfs 8,577 cf

Pond CB5: CB Peak Elev=575.67' Inflow=0.06 cfs 296 cf
12.0" Round Culvert n=0.013 L=51.0' S=0.0045 '/' Outflow=0.06 cfs 296 cf

Pond DMH1: CB Peak Elev=573.60' Inflow=2.05 cfs 6,528 cf
12.0" Round Culvert n=0.013 L=77.0' S=0.0004 '/' Outflow=2.05 cfs 6,528 cf

Pond DMH2: CB Peak Elev=575.33' Inflow=0.06 cfs 296 cf
12.0" Round Culvert n=0.013 L=49.0' S=0.0078 '/' Outflow=0.06 cfs 296 cf

Pond DMH3: CB Peak Elev=573.75' Inflow=1.82 cfs 6,556 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0250 '/' Outflow=1.82 cfs 6,556 cf

Pond WQU: WQU Peak Elev=573.70' Inflow=2.05 cfs 6,528 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0100 '/' Outflow=2.05 cfs 6,528 cf

Link A: rail trail
Primary=0.00 cfs 0 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.01 cfs 46 cf
Primary=0.01 cfs 46 cf

Link D: municipal drainage Inflow=5.91 cfs 19,741 cf
Primary=5.91 cfs 19,741 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.11 cfs 339 cf
Primary=0.11 cfs 339 cf

Total Runoff Area = 85,029 sf Runoff Volume = 19,741 cf Average Runoff Depth = 2.79"
30.35% Pervious = 25,810 sf 69.65% Impervious = 59,219 sf

Summary for Subcatchment PS-1:

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 2,750 cf, Depth> 2.64"
Routed to Pond CB1 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
9,234	98	Paved parking, HSG A
3,251	39	>75% Grass cover, Good, HSG A
12,485	83	Weighted Average
3,251		26.04% Pervious Area
9,234		73.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-10:

Runoff = 0.11 cfs @ 12.10 hrs, Volume= 339 cf, Depth> 1.90"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
858	39	>75% Grass cover, Good, HSG A
1,282	98	Paved parking, HSG A
2,140	74	Weighted Average
858		40.09% Pervious Area
1,282		59.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-2:

Runoff = 1.09 cfs @ 12.09 hrs, Volume= 3,452 cf, Depth> 2.73"
Routed to Pond CB2 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
5,357	98	Paved parking, HSG A
1,919	39	>75% Grass cover, Good, HSG A
449	98	Paved parking, HSG A
2,618	61	>75% Grass cover, Good, HSG B
4,377	98	Paved parking, HSG B
434	98	Paved parking, HSG B
15,154	84	Weighted Average
4,537		29.94% Pervious Area
10,617		70.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-3:

Runoff = 0.09 cfs @ 12.10 hrs, Volume= 326 cf, Depth> 1.21"
Routed to Pond CB3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
2,927	61	>75% Grass cover, Good, HSG B
305	98	Paved parking, HSG B
3,232	64	Weighted Average
2,927		90.56% Pervious Area
305		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-4:

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 2,049 cf, Depth> 2.82"
Routed to Pond CB4 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
3,085	61	>75% Grass cover, Good, HSG B
5,620	98	Paved parking, HSG B
8,705	85	Weighted Average
3,085		35.44% Pervious Area
5,620		64.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-5:

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 833 cf, Depth> 3.41"
Routed to Pond CB1002 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
553	61	>75% Grass cover, Good, HSG B
2,378	98	Paved parking, HSG B
2,931	91	Weighted Average
553		18.87% Pervious Area
2,378		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-6:

Runoff = 0.01 cfs @ 12.11 hrs, Volume= 46 cf, Depth> 1.03"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
534	61	>75% Grass cover, Good, HSG B
534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-7:

Runoff = 0.98 cfs @ 12.09 hrs, Volume= 3,093 cf, Depth> 2.64"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
6,399	98	Paved parking, HSG B
3,131	98	Paved parking, HSG A
1,814	39	>75% Grass cover, Good, HSG A
2,698	61	>75% Grass cover, Good, HSG B
14,042	83	Weighted Average
4,512		32.13% Pervious Area
9,530		67.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-8:

Runoff = 1.82 cfs @ 12.09 hrs, Volume= 6,556 cf, Depth> 4.17"
Routed to Pond DMH3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
8,309	98	Roofs, HSG B
10,551	98	Roofs, HSG A
18,860	98	Weighted Average
18,860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-9:

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.06 cfs @ 12.05 hrs, Volume= 296 cf, Depth> 0.51"
Routed to Pond CB5 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=4.41"

Area (sf)	CN	Description
5,553	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG A
6,946	51	Weighted Average
5,553		79.95% Pervious Area
1,393		20.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					**Direct Entry, 6**

Summary for Pond CB1: CB

Inflow Area = 12,485 sf, 73.96% Impervious, Inflow Depth > 2.64" for 25-YR event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 2,750 cf
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 2,750 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 2,750 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.81' @ 12.30 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 103.4' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.06' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.73 cfs @ 12.09 hrs HW=573.54' TW=573.02' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.73 cfs @ 2.47 fps)

Summary for Pond CB1002: CB

Inflow Area = 42,507 sf, 66.23% Impervious, Inflow Depth > 2.66" for 25-YR event
Inflow = 2.95 cfs @ 12.09 hrs, Volume= 9,410 cf
Outflow = 2.95 cfs @ 12.09 hrs, Volume= 9,410 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.95 cfs @ 12.09 hrs, Volume= 9,410 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 572.75' @ 12.09 hrs
Flood Elev= 574.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.32'	**12.0" Round Culvert** L= 33.4' Ke= 0.500 Inlet / Outlet Invert= 571.32' / 571.19' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.86 cfs @ 12.09 hrs HW=572.72' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 2.86 cfs @ 3.64 fps)

Summary for Pond CB2: CB

[80] Warning: Exceeded Pond CB1 by 0.15' @ 12.25 hrs (0.70 cfs 125 cf)
[80] Warning: Exceeded Pond CB3 by 0.26' @ 12.25 hrs (1.75 cfs 985 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 2.54" for 25-YR event
Inflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Outflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Routed to Pond WQU : WQU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.77' @ 12.25 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.96'	**12.0" Round Culvert** L= 20.5' Ke= 0.500 Inlet / Outlet Invert= 571.96' / 571.86' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.09 hrs HW=573.02' TW=573.02' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.16 cfs @ 0.21 fps)

Summary for Pond CB3: CB

Inflow Area = 3,232 sf, 9.44% Impervious, Inflow Depth > 1.21" for 25-YR event
Inflow = 0.09 cfs @ 12.10 hrs, Volume= 326 cf
Outflow = 0.09 cfs @ 12.10 hrs, Volume= 326 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 12.10 hrs, Volume= 326 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.77' @ 12.30 hrs
Flood Elev= 576.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	572.43'	**12.0" Round Culvert** L= 59.8' Ke= 0.500 Inlet / Outlet Invert= 572.43' / 572.16' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=572.89' TW=573.07' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB

[80] Warning: Exceeded Pond DMH1 by 0.11' @ 12.10 hrs (1.04 cfs 270 cf)

Inflow Area = 39,576 sf, 65.13% Impervious, Inflow Depth > 2.60" for 25-YR event
Inflow = 2.70 cfs @ 12.09 hrs, Volume= 8,577 cf
Outflow = 2.70 cfs @ 12.09 hrs, Volume= 8,577 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.70 cfs @ 12.09 hrs, Volume= 8,577 cf
Routed to Pond CB1002 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.36' @ 12.12 hrs
Flood Elev= 574.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Culvert** L= 83.0' Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.14' S= 0.0043 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.24 cfs @ 12.09 hrs HW=573.23' TW=572.72' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.24 cfs @ 2.85 fps)

Summary for Pond CB5: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.51" for 25-YR event
Inflow = 0.06 cfs @ 12.05 hrs, Volume= 296 cf
Outflow = 0.06 cfs @ 12.05 hrs, Volume= 296 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.05 hrs, Volume= 296 cf
Routed to Pond DMH2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.67' @ 12.05 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.53'	**12.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 575.53' / 575.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.06 cfs @ 12.05 hrs HW=575.67' TW=575.33' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.06 cfs @ 1.27 fps)

Summary for Pond DMH1: CB

[80] Warning: Exceeded Pond WQU by 0.19' @ 12.15 hrs (1.63 cfs 690 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 2.54" for 25-YR event
Inflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Outflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Routed to Pond CB4 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.60' @ 12.16 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.58'	**12.0" Round Culvert** L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 571.58' / 571.55' S= 0.0004 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.14' TW=573.24' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH2: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.51" for 25-YR event
Inflow = 0.06 cfs @ 12.05 hrs, Volume= 296 cf
Outflow = 0.06 cfs @ 12.05 hrs, Volume= 296 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.06 cfs @ 12.05 hrs, Volume= 296 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.33' @ 12.05 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.20'	**12.0" Round Culvert** L= 49.0' Ke= 0.500 Inlet / Outlet Invert= 575.20' / 574.82' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.06 cfs @ 12.05 hrs HW=575.33' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.06 cfs @ 1.51 fps)

Summary for Pond DMH3: CB

Inflow Area = 18,860 sf,100.00% Impervious, Inflow Depth > 4.17" for 25-YR event
Inflow = 1.82 cfs @ 12.09 hrs, Volume= 6,556 cf
Outflow = 1.82 cfs @ 12.09 hrs, Volume= 6,556 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.82 cfs @ 12.09 hrs, Volume= 6,556 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.75' @ 12.09 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.75' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.77 cfs @ 12.09 hrs HW=573.74' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.77 cfs @ 3.96 fps)

Summary for Pond WQU: WQU

[80] Warning: Exceeded Pond CB2 by 0.19' @ 12.20 hrs (1.63 cfs 640 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 2.54" for 25-YR event
Inflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Outflow = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.09 hrs, Volume= 6,528 cf
Routed to Pond DMH1 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 573.70' @ 12.20 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.66'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 571.66' / 571.63' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.02' TW=573.14' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Link A: rail trail

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 534 sf, 0.00% Impervious, Inflow Depth > 1.03" for 25-YR event
Inflow = 0.01 cfs @ 12.11 hrs, Volume= 46 cf
Primary = 0.01 cfs @ 12.11 hrs, Volume= 46 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 85,029 sf, 69.65% Impervious, Inflow Depth > 2.79" for 25-YR event
Inflow = 5.91 cfs @ 12.09 hrs, Volume= 19,741 cf
Primary = 5.91 cfs @ 12.09 hrs, Volume= 19,741 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 2,140 sf, 59.91% Impervious, Inflow Depth > 1.90" for 25-YR event
Inflow = 0.11 cfs @ 12.10 hrs, Volume= 339 cf
Primary = 0.11 cfs @ 12.10 hrs, Volume= 339 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-1: Runoff Area=12,485 sf 73.96% Impervious Runoff Depth>3.31"
Tc=6.0 min CN=83 Runoff=1.08 cfs 3,441 cf

Subcatchment PS-10: Runoff Area=2,140 sf 59.91% Impervious Runoff Depth>2.48"
Tc=6.0 min CN=74 Runoff=0.14 cfs 443 cf

Subcatchment PS-2: Runoff Area=15,154 sf 70.06% Impervious Runoff Depth>3.41"
Tc=6.0 min CN=84 Runoff=1.35 cfs 4,300 cf

Subcatchment PS-3: Runoff Area=3,232 sf 9.44% Impervious Runoff Depth>1.68"
Tc=6.0 min CN=64 Runoff=0.14 cfs 452 cf

Subcatchment PS-4: Runoff Area=8,705 sf 64.56% Impervious Runoff Depth>3.50"
Tc=6.0 min CN=85 Runoff=0.79 cfs 2,542 cf

Subcatchment PS-5: Runoff Area=2,931 sf 81.13% Impervious Runoff Depth>4.12"
Tc=6.0 min CN=91 Runoff=0.30 cfs 1,008 cf

Subcatchment PS-6: Runoff Area=534 sf 0.00% Impervious Runoff Depth>1.46"
Tc=6.0 min CN=61 Runoff=0.02 cfs 65 cf

Subcatchment PS-7: Runoff Area=14,042 sf 67.87% Impervious Runoff Depth>3.31"
Tc=6.0 min CN=83 Runoff=1.22 cfs 3,870 cf

Subcatchment PS-8: Runoff Area=18,860 sf 100.00% Impervious Runoff Depth>4.91"
Tc=6.0 min CN=98 Runoff=2.13 cfs 7,717 cf

Subcatchment PS-9: Runoff Area=6,946 sf 20.05% Impervious Runoff Depth>0.81"
Tc=0.0 min CN=51 Runoff=0.12 cfs 470 cf

Pond CB1: CB Peak Elev=574.79' Inflow=1.08 cfs 3,441 cf
12.0" Round Culvert n=0.013 L=103.4' S=0.0091 '/' Outflow=1.08 cfs 3,441 cf

Pond CB1002: CB Peak Elev=573.05' Inflow=3.67 cfs 11,742 cf
12.0" Round Culvert n=0.013 L=33.4' S=0.0039 '/' Outflow=3.67 cfs 11,742 cf

Pond CB2: CB Peak Elev=574.76' Inflow=2.57 cfs 8,193 cf
12.0" Round Culvert n=0.013 L=20.5' S=0.0049 '/' Outflow=2.57 cfs 8,193 cf

Pond CB3: CB Peak Elev=574.76' Inflow=0.14 cfs 452 cf
12.0" Round Culvert n=0.013 L=59.8' S=0.0045 '/' Outflow=0.14 cfs 452 cf

Pond CB4: CB Peak Elev=574.08' Inflow=3.36 cfs 10,735 cf
12.0" Round Culvert n=0.013 L=83.0' S=0.0043 '/' Outflow=3.36 cfs 10,735 cf

Pond CB5: CB Peak Elev=575.73' Inflow=0.12 cfs 470 cf
12.0" Round Culvert n=0.013 L=51.0' S=0.0045 '/' Outflow=0.12 cfs 470 cf

Pond DMH1: CB Peak Elev=574.47' Inflow=2.57 cfs 8,193 cf
12.0" Round Culvert n=0.013 L=77.0' S=0.0004 '/' Outflow=2.57 cfs 8,193 cf

Pond DMH2: CB Peak Elev=575.38' Inflow=0.12 cfs 470 cf
12.0" Round Culvert n=0.013 L=49.0' S=0.0078 '/' Outflow=0.12 cfs 470 cf

Pond DMH3: CB Peak Elev=573.84' Inflow=2.13 cfs 7,717 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0250 '/' Outflow=2.13 cfs 7,717 cf

Pond WQU: WQU Peak Elev=574.64' Inflow=2.57 cfs 8,193 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0100 '/' Outflow=2.57 cfs 8,193 cf

Link A: rail trail
Primary=0.00 cfs 0 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.02 cfs 65 cf
Primary=0.02 cfs 65 cf

Link D: municipal drainage Inflow=7.26 cfs 24,307 cf
Primary=7.26 cfs 24,307 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.14 cfs 443 cf
Primary=0.14 cfs 443 cf

Total Runoff Area = 85,029 sf Runoff Volume = 24,307 cf Average Runoff Depth = 3.43"
30.35% Pervious = 25,810 sf 69.65% Impervious = 59,219 sf

Summary for Subcatchment PS-1:

Runoff = 1.08 cfs @ 12.09 hrs, Volume= 3,441 cf, Depth> 3.31"
Routed to Pond CB1 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
9,234	98	Paved parking, HSG A
3,251	39	>75% Grass cover, Good, HSG A
12,485	83	Weighted Average
3,251		26.04% Pervious Area
9,234		73.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-10:

Runoff = 0.14 cfs @ 12.09 hrs, Volume= 443 cf, Depth> 2.48"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
858	39	>75% Grass cover, Good, HSG A
1,282	98	Paved parking, HSG A
2,140	74	Weighted Average
858		40.09% Pervious Area
1,282		59.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-2:

Runoff = 1.35 cfs @ 12.09 hrs, Volume= 4,300 cf, Depth> 3.41"
Routed to Pond CB2 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
5,357	98	Paved parking, HSG A
1,919	39	>75% Grass cover, Good, HSG A
449	98	Paved parking, HSG A
2,618	61	>75% Grass cover, Good, HSG B
4,377	98	Paved parking, HSG B
434	98	Paved parking, HSG B
15,154	84	Weighted Average
4,537		29.94% Pervious Area
10,617		70.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-3:

Runoff = 0.14 cfs @ 12.10 hrs, Volume= 452 cf, Depth> 1.68"
Routed to Pond CB3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
2,927	61	>75% Grass cover, Good, HSG B
305	98	Paved parking, HSG B
3,232	64	Weighted Average
2,927		90.56% Pervious Area
305		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-4:

Runoff = 0.79 cfs @ 12.09 hrs, Volume= 2,542 cf, Depth> 3.50"
Routed to Pond CB4 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
3,085	61	>75% Grass cover, Good, HSG B
5,620	98	Paved parking, HSG B
8,705	85	Weighted Average
3,085		35.44% Pervious Area
5,620		64.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-5:

Runoff = 0.30 cfs @ 12.09 hrs, Volume= 1,008 cf, Depth> 4.12"
Routed to Pond CB1002 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
553	61	>75% Grass cover, Good, HSG B
2,378	98	Paved parking, HSG B
2,931	91	Weighted Average
553		18.87% Pervious Area
2,378		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-6:

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 65 cf, Depth> 1.46"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
534	61	>75% Grass cover, Good, HSG B
534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-7:

Runoff = 1.22 cfs @ 12.09 hrs, Volume= 3,870 cf, Depth> 3.31"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
6,399	98	Paved parking, HSG B
3,131	98	Paved parking, HSG A
1,814	39	>75% Grass cover, Good, HSG A
2,698	61	>75% Grass cover, Good, HSG B
14,042	83	Weighted Average
4,512		32.13% Pervious Area
9,530		67.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-8:

Runoff = 2.13 cfs @ 12.09 hrs, Volume= 7,717 cf, Depth> 4.91"
Routed to Pond DMH3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
8,309	98	Roofs, HSG B
10,551	98	Roofs, HSG A
18,860	98	Weighted Average
18,860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-9:

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.12 cfs @ 12.03 hrs, Volume= 470 cf, Depth> 0.81"
Routed to Pond CB5 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=5.15"

Area (sf)	CN	Description
5,553	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG A
6,946	51	Weighted Average
5,553		79.95% Pervious Area
1,393		20.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					**Direct Entry, 6**

Summary for Pond CB1: CB

Inflow Area = 12,485 sf, 73.96% Impervious, Inflow Depth > 3.31" for 50-YR event
Inflow = 1.08 cfs @ 12.09 hrs, Volume= 3,441 cf
Outflow = 1.08 cfs @ 12.09 hrs, Volume= 3,441 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.09 hrs, Volume= 3,441 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 574.79' @ 12.29 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 103.4' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.06' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.61 cfs @ 12.09 hrs HW=573.64' TW=573.43' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.61 cfs @ 1.64 fps)

Summary for Pond CB1002: CB

Inflow Area = 42,507 sf, 66.23% Impervious, Inflow Depth > 3.31" for 50-YR event
Inflow = 3.67 cfs @ 12.09 hrs, Volume= 11,742 cf
Outflow = 3.67 cfs @ 12.09 hrs, Volume= 11,742 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.67 cfs @ 12.09 hrs, Volume= 11,742 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.05' @ 12.09 hrs
Flood Elev= 574.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.32'	**12.0" Round Culvert** L= 33.4' Ke= 0.500 Inlet / Outlet Invert= 571.32' / 571.19' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.59 cfs @ 12.09 hrs HW=573.02' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 3.59 cfs @ 4.57 fps)

Summary for Pond CB2: CB

[80] Warning: Exceeded Pond CB1 by 0.48' @ 12.20 hrs (2.00 cfs 784 cf)
[80] Warning: Exceeded Pond CB3 by 0.55' @ 12.20 hrs (2.54 cfs 1,751 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.18" for 50-YR event
Inflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Outflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Routed to Pond WQU : WQU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 574.76' @ 12.24 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.96'	**12.0" Round Culvert** L= 20.5' Ke= 0.500 Inlet / Outlet Invert= 571.96' / 571.86' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.44' TW=573.51' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB3: CB

Inflow Area = 3,232 sf, 9.44% Impervious, Inflow Depth > 1.68" for 50-YR event
Inflow = 0.14 cfs @ 12.10 hrs, Volume= 452 cf
Outflow = 0.14 cfs @ 12.10 hrs, Volume= 452 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.10 hrs, Volume= 452 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 574.76' @ 12.29 hrs
Flood Elev= 576.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	572.43'	**12.0" Round Culvert** L= 59.8' Ke= 0.500 Inlet / Outlet Invert= 572.43' / 572.16' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=573.07' TW=573.52' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB

[80] Warning: Exceeded Pond DMH1 by 0.19' @ 12.05 hrs (1.40 cfs 398 cf)

Inflow Area = 39,576 sf, 65.13% Impervious, Inflow Depth > 3.25" for 50-YR event
Inflow = 3.36 cfs @ 12.09 hrs, Volume= 10,735 cf
Outflow = 3.36 cfs @ 12.09 hrs, Volume= 10,735 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.36 cfs @ 12.09 hrs, Volume= 10,735 cf
Routed to Pond CB1002 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 574.08' @ 12.11 hrs
Flood Elev= 574.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Culvert** L= 83.0' Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.14' S= 0.0043 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.97 cfs @ 12.09 hrs HW=573.93' TW=573.02' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.97 cfs @ 3.78 fps)

Summary for Pond CB5: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.81" for 50-YR event
Inflow = 0.12 cfs @ 12.03 hrs, Volume= 470 cf
Outflow = 0.12 cfs @ 12.03 hrs, Volume= 470 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.03 hrs, Volume= 470 cf
Routed to Pond DMH2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.73' @ 12.03 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.53'	**12.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 575.53' / 575.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.11 cfs @ 12.03 hrs HW=575.73' TW=575.38' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.11 cfs @ 1.55 fps)

Summary for Pond DMH1: CB

[80] Warning: Exceeded Pond WQU by 0.38' @ 12.10 hrs (2.34 cfs 921 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.18" for 50-YR event
Inflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Outflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Routed to Pond CB4 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 574.47' @ 12.15 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.58'	**12.0" Round Culvert** L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 571.58' / 571.55' S= 0.0004 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.84' TW=573.93' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH2: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 0.81" for 50-YR event
Inflow = 0.12 cfs @ 12.03 hrs, Volume= 470 cf
Outflow = 0.12 cfs @ 12.03 hrs, Volume= 470 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.03 hrs, Volume= 470 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.38' @ 12.03 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.20'	**12.0" Round Culvert** L= 49.0' Ke= 0.500 Inlet / Outlet Invert= 575.20' / 574.82' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.11 cfs @ 12.03 hrs HW=575.38' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 0.11 cfs @ 1.83 fps)

Summary for Pond DMH3: CB

Inflow Area = 18,860 sf,100.00% Impervious, Inflow Depth > 4.91" for 50-YR event
Inflow = 2.13 cfs @ 12.09 hrs, Volume= 7,717 cf
Outflow = 2.13 cfs @ 12.09 hrs, Volume= 7,717 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.09 hrs, Volume= 7,717 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.84' @ 12.09 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.75' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.07 cfs @ 12.09 hrs HW=573.82' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 2.07 cfs @ 4.07 fps)

Summary for Pond WQU: WQU

[80] Warning: Exceeded Pond CB2 by 0.38' @ 12.15 hrs (2.34 cfs 921 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.18" for 50-YR event
Inflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Outflow = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.57 cfs @ 12.09 hrs, Volume= 8,193 cf
Routed to Pond DMH1 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 574.64' @ 12.20 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.66'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 571.66' / 571.63' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.51' TW=573.84' (Dynamic Tailwater)
└─**1=Culvert** (Controls 0.00 cfs)

Summary for Link A: rail trail

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 534 sf, 0.00% Impervious, Inflow Depth > 1.46" for 50-YR event
Inflow = 0.02 cfs @ 12.10 hrs, Volume= 65 cf
Primary = 0.02 cfs @ 12.10 hrs, Volume= 65 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 85,029 sf, 69.65% Impervious, Inflow Depth > 3.43" for 50-YR event
Inflow = 7.26 cfs @ 12.09 hrs, Volume= 24,307 cf
Primary = 7.26 cfs @ 12.09 hrs, Volume= 24,307 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 2,140 sf, 59.91% Impervious, Inflow Depth > 2.48" for 50-YR event
Inflow = 0.14 cfs @ 12.09 hrs, Volume= 443 cf
Primary = 0.14 cfs @ 12.09 hrs, Volume= 443 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS-1: Runoff Area=12,485 sf 73.96% Impervious Runoff Depth>4.12"
Tc=6.0 min CN=83 Runoff=1.34 cfs 4,282 cf

Subcatchment PS-10: Runoff Area=2,140 sf 59.91% Impervious Runoff Depth>3.21"
Tc=6.0 min CN=74 Runoff=0.18 cfs 572 cf

Subcatchment PS-2: Runoff Area=15,154 sf 70.06% Impervious Runoff Depth>4.22"
Tc=6.0 min CN=84 Runoff=1.66 cfs 5,331 cf

Subcatchment PS-3: Runoff Area=3,232 sf 9.44% Impervious Runoff Depth>2.28"
Tc=6.0 min CN=64 Runoff=0.19 cfs 615 cf

Subcatchment PS-4: Runoff Area=8,705 sf 64.56% Impervious Runoff Depth>4.33"
Tc=6.0 min CN=85 Runoff=0.97 cfs 3,139 cf

Subcatchment PS-5: Runoff Area=2,931 sf 81.13% Impervious Runoff Depth>4.98"
Tc=6.0 min CN=91 Runoff=0.36 cfs 1,217 cf

Subcatchment PS-6: Runoff Area=534 sf 0.00% Impervious Runoff Depth>2.02"
Tc=6.0 min CN=61 Runoff=0.03 cfs 90 cf

Subcatchment PS-7: Runoff Area=14,042 sf 67.87% Impervious Runoff Depth>4.12"
Tc=6.0 min CN=83 Runoff=1.51 cfs 4,816 cf

Subcatchment PS-8: Runoff Area=18,860 sf 100.00% Impervious Runoff Depth>5.79"
Tc=6.0 min CN=98 Runoff=2.50 cfs 9,097 cf

Subcatchment PS-9: Runoff Area=6,946 sf 20.05% Impervious Runoff Depth>1.23"
Tc=0.0 min CN=51 Runoff=0.22 cfs 712 cf

Pond CB1: CB Peak Elev=576.19' Inflow=1.34 cfs 4,282 cf
12.0" Round Culvert n=0.013 L=103.4' S=0.0091 '/' Outflow=1.34 cfs 4,282 cf

Pond CB1002: CB Peak Elev=573.50' Inflow=4.52 cfs 14,584 cf
12.0" Round Culvert n=0.013 L=33.4' S=0.0039 '/' Outflow=4.52 cfs 14,584 cf

Pond CB2: CB Peak Elev=576.15' Inflow=3.19 cfs 10,228 cf
12.0" Round Culvert n=0.013 L=20.5' S=0.0049 '/' Outflow=3.19 cfs 10,228 cf

Pond CB3: CB Peak Elev=576.15' Inflow=0.19 cfs 615 cf
12.0" Round Culvert n=0.013 L=59.8' S=0.0045 '/' Outflow=0.19 cfs 615 cf

Pond CB4: CB Peak Elev=575.07' Inflow=4.16 cfs 13,367 cf
12.0" Round Culvert n=0.013 L=83.0' S=0.0043 '/' Outflow=4.16 cfs 13,367 cf

Pond CB5: CB Peak Elev=575.81' Inflow=0.22 cfs 712 cf
12.0" Round Culvert n=0.013 L=51.0' S=0.0045 '/' Outflow=0.22 cfs 712 cf

Pond DMH1: CB Peak Elev=575.69' Inflow=3.19 cfs 10,228 cf
12.0" Round Culvert n=0.013 L=77.0' S=0.0004 '/' Outflow=3.19 cfs 10,228 cf

Pond DMH2: CB Peak Elev=575.45' Inflow=0.22 cfs 712 cf
12.0" Round Culvert n=0.013 L=49.0' S=0.0078 '/' Outflow=0.22 cfs 712 cf

Pond DMH3: CB Peak Elev=573.94' Inflow=2.50 cfs 9,097 cf
12.0" Round Culvert n=0.013 L=10.0' S=0.0250 '/' Outflow=2.50 cfs 9,097 cf

Pond WQU: WQU Peak Elev=575.96' Inflow=3.19 cfs 10,228 cf
12.0" Round Culvert n=0.013 L=3.0' S=0.0100 '/' Outflow=3.19 cfs 10,228 cf

Link A: rail trail
Primary=0.00 cfs 0 cf

Link C: Lot 78-39 (Internal Node) Inflow=0.03 cfs 90 cf
Primary=0.03 cfs 90 cf

Link D: municipal drainage Inflow=8.88 cfs 29,872 cf
Primary=8.88 cfs 29,872 cf

Link E: Lot 92-33 (Internal Node) Inflow=0.18 cfs 572 cf
Primary=0.18 cfs 572 cf

Total Runoff Area = 85,029 sf Runoff Volume = 29,872 cf Average Runoff Depth = 4.22"
30.35% Pervious = 25,810 sf 69.65% Impervious = 59,219 sf

Summary for Subcatchment PS-1:

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 4,282 cf, Depth> 4.12"
Routed to Pond CB1 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
9,234	98	Paved parking, HSG A
3,251	39	>75% Grass cover, Good, HSG A
12,485	83	Weighted Average
3,251		26.04% Pervious Area
9,234		73.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-10:

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 572 cf, Depth> 3.21"
Routed to Link E : Lot 92-33 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
858	39	>75% Grass cover, Good, HSG A
1,282	98	Paved parking, HSG A
2,140	74	Weighted Average
858		40.09% Pervious Area
1,282		59.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-2:

Runoff = 1.66 cfs @ 12.09 hrs, Volume= 5,331 cf, Depth> 4.22"
Routed to Pond CB2 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
5,357	98	Paved parking, HSG A
1,919	39	>75% Grass cover, Good, HSG A
449	98	Paved parking, HSG A
2,618	61	>75% Grass cover, Good, HSG B
4,377	98	Paved parking, HSG B
434	98	Paved parking, HSG B
15,154	84	Weighted Average
4,537		29.94% Pervious Area
10,617		70.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-3:

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 615 cf, Depth> 2.28"
Routed to Pond CB3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
2,927	61	>75% Grass cover, Good, HSG B
305	98	Paved parking, HSG B
3,232	64	Weighted Average
2,927		90.56% Pervious Area
305		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-4:

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 3,139 cf, Depth> 4.33"
Routed to Pond CB4 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
3,085	61	>75% Grass cover, Good, HSG B
5,620	98	Paved parking, HSG B
8,705	85	Weighted Average
3,085		35.44% Pervious Area
5,620		64.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-5:

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 1,217 cf, Depth> 4.98"
Routed to Pond CB1002 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
553	61	>75% Grass cover, Good, HSG B
2,378	98	Paved parking, HSG B
2,931	91	Weighted Average
553		18.87% Pervious Area
2,378		81.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-6:

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 90 cf, Depth> 2.02"
Routed to Link C : Lot 78-39 (Internal Node)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
534	61	>75% Grass cover, Good, HSG B
534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-7:

Runoff = 1.51 cfs @ 12.09 hrs, Volume= 4,816 cf, Depth> 4.12"
Routed to Link D : municipal drainage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
6,399	98	Paved parking, HSG B
3,131	98	Paved parking, HSG A
1,814	39	>75% Grass cover, Good, HSG A
2,698	61	>75% Grass cover, Good, HSG B
14,042	83	Weighted Average
4,512		32.13% Pervious Area
9,530		67.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-8:

Runoff = 2.50 cfs @ 12.09 hrs, Volume= 9,097 cf, Depth> 5.79"
Routed to Pond DMH3 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
8,309	98	Roofs, HSG B
10,551	98	Roofs, HSG A
18,860	98	Weighted Average
18,860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS-9:

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.22 cfs @ 12.02 hrs, Volume= 712 cf, Depth> 1.23"
Routed to Pond CB5 : CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=6.03"

Area (sf)	CN	Description
5,553	39	>75% Grass cover, Good, HSG A
1,393	98	Paved parking, HSG A
6,946	51	Weighted Average
5,553		79.95% Pervious Area
1,393		20.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					**Direct Entry, 6**

Summary for Pond CB1: CB

Inflow Area = 12,485 sf, 73.96% Impervious, Inflow Depth > 4.12" for 100-YR event
Inflow = 1.34 cfs @ 12.09 hrs, Volume= 4,282 cf
Outflow = 1.34 cfs @ 12.09 hrs, Volume= 4,282 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.34 cfs @ 12.09 hrs, Volume= 4,282 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 576.19' @ 12.29 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 103.4' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.06' S= 0.0091 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=573.85' TW=574.10' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB1002: CB

Inflow Area = 42,507 sf, 66.23% Impervious, Inflow Depth > 4.12" for 100-YR event
Inflow = 4.52 cfs @ 12.09 hrs, Volume= 14,584 cf
Outflow = 4.52 cfs @ 12.09 hrs, Volume= 14,584 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.52 cfs @ 12.09 hrs, Volume= 14,584 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.50' @ 12.09 hrs
Flood Elev= 574.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.32'	**12.0" Round Culvert** L= 33.4' Ke= 0.500 Inlet / Outlet Invert= 571.32' / 571.19' S= 0.0039 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=4.42 cfs @ 12.09 hrs HW=573.45' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 4.42 cfs @ 5.63 fps)

Summary for Pond CB2: CB

[58] Hint: Peaked 0.72' above defined flood level
[80] Warning: Exceeded Pond CB1 by 0.84' @ 12.20 hrs (2.65 cfs 1,420 cf)
[80] Warning: Exceeded Pond CB3 by 0.91' @ 12.20 hrs (3.27 cfs 2,498 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.98" for 100-YR event
Inflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Outflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Routed to Pond WQU : WQU

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 576.15' @ 12.24 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.96'	**12.0" Round Culvert** L= 20.5' Ke= 0.500 Inlet / Outlet Invert= 571.96' / 571.86' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=574.11' TW=574.32' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB3: CB

Inflow Area = 3,232 sf, 9.44% Impervious, Inflow Depth > 2.28" for 100-YR event
Inflow = 0.19 cfs @ 12.10 hrs, Volume= 615 cf
Outflow = 0.19 cfs @ 12.10 hrs, Volume= 615 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.10 hrs, Volume= 615 cf
Routed to Pond CB2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 576.15' @ 12.29 hrs
Flood Elev= 576.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	572.43'	**12.0" Round Culvert** L= 59.8' Ke= 0.500 Inlet / Outlet Invert= 572.43' / 572.16' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=573.51' TW=574.22' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond CB4: CB

[58] Hint: Peaked 0.57' above defined flood level
[80] Warning: Exceeded Pond DMH1 by 0.37' @ 12.05 hrs (1.94 cfs 429 cf)

Inflow Area = 39,576 sf, 65.13% Impervious, Inflow Depth > 4.05" for 100-YR event
Inflow = 4.16 cfs @ 12.09 hrs, Volume= 13,367 cf
Outflow = 4.16 cfs @ 12.09 hrs, Volume= 13,367 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.16 cfs @ 12.09 hrs, Volume= 13,367 cf
Routed to Pond CB1002 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 575.07' @ 12.11 hrs
Flood Elev= 574.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.50'	**12.0" Round Culvert** L= 83.0' Ke= 0.500 Inlet / Outlet Invert= 571.50' / 571.14' S= 0.0043 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.72 cfs @ 12.09 hrs HW=574.88' TW=573.45' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.72 cfs @ 4.73 fps)

Summary for Pond CB5: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 1.23" for 100-YR event
Inflow = 0.22 cfs @ 12.02 hrs, Volume= 712 cf
Outflow = 0.22 cfs @ 12.02 hrs, Volume= 712 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.02 hrs, Volume= 712 cf
Routed to Pond DMH2 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.81' @ 12.02 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.53'	**12.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 575.53' / 575.30' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.20 cfs @ 12.02 hrs HW=575.80' TW=575.44' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.20 cfs @ 1.82 fps)

Summary for Pond DMH1: CB

[80] Warning: Exceeded Pond WQU by 0.66' @ 12.10 hrs (3.07 cfs 1,157 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.98" for 100-YR event
Inflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Outflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Routed to Pond CB4 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.69' @ 12.15 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.58'	**12.0" Round Culvert** L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 571.58' / 571.55' S= 0.0004 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.09 hrs HW=574.90' TW=574.88' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.49 cfs @ 0.63 fps)

Summary for Pond DMH2: CB

Inflow Area = 6,946 sf, 20.05% Impervious, Inflow Depth > 1.23" for 100-YR event
Inflow = 0.22 cfs @ 12.02 hrs, Volume= 712 cf
Outflow = 0.22 cfs @ 12.02 hrs, Volume= 712 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.22 cfs @ 12.02 hrs, Volume= 712 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.45' @ 12.02 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	575.20'	**12.0" Round Culvert** L= 49.0' Ke= 0.500 Inlet / Outlet Invert= 575.20' / 574.82' S= 0.0078 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.20 cfs @ 12.02 hrs HW=575.44' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 0.20 cfs @ 2.14 fps)

Summary for Pond DMH3: CB

Inflow Area = 18,860 sf,100.00% Impervious, Inflow Depth > 5.79" for 100-YR event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 9,097 cf
Outflow = 2.50 cfs @ 12.09 hrs, Volume= 9,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.50 cfs @ 12.09 hrs, Volume= 9,097 cf
Routed to Link D : municipal drainage

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 573.94' @ 12.09 hrs
Flood Elev= 577.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	573.00'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 573.00' / 572.75' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.43 cfs @ 12.09 hrs HW=573.92' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 2.43 cfs @ 4.20 fps)

Summary for Pond WQU: WQU

[58] Hint: Peaked 0.53' above defined flood level
[80] Warning: Exceeded Pond CB2 by 0.66' @ 12.15 hrs (3.07 cfs 1,157 cf)

Inflow Area = 30,871 sf, 65.29% Impervious, Inflow Depth > 3.98" for 100-YR event
Inflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Outflow = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.19 cfs @ 12.09 hrs, Volume= 10,228 cf
Routed to Pond DMH1 : CB

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 575.96' @ 12.19 hrs
Flood Elev= 575.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	571.66'	**12.0" Round Culvert** L= 3.0' Ke= 0.500 Inlet / Outlet Invert= 571.66' / 571.63' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 12.09 hrs HW=574.32' TW=574.90' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Link A: rail trail

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link C: Lot 78-39 (Internal Node)

Inflow Area = 534 sf, 0.00% Impervious, Inflow Depth > 2.02" for 100-YR event
Inflow = 0.03 cfs @ 12.10 hrs, Volume= 90 cf
Primary = 0.03 cfs @ 12.10 hrs, Volume= 90 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: municipal drainage

Inflow Area = 85,029 sf, 69.65% Impervious, Inflow Depth > 4.22" for 100-YR event
Inflow = 8.88 cfs @ 12.09 hrs, Volume= 29,872 cf
Primary = 8.88 cfs @ 12.09 hrs, Volume= 29,872 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: Lot 92-33 (Internal Node)

Inflow Area = 2,140 sf, 59.91% Impervious, Inflow Depth > 3.21" for 100-YR event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 572 cf
Primary = 0.18 cfs @ 12.09 hrs, Volume= 572 cf, Atten= 0%, Lag= 0.0 min
Routed to Link D : municipal drainage

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Inspection & Maintenance Manual
The Muse Apartments

Tax Map 92 Lot 31
20 Spencer Street
Lebanon, NH
August 12, 2024

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Description of Project

20 Spencer Street, Lot 92 Tax Map 31 is an existing 1.92 acre parcel in Lebanon, NH that has historically functioned as a storage and outdoor facility for NHDOT and Public Works. It is almost entirely impervious, compacted gravel surface. The project proposes to construct an 80 unit, 4-story multifamily apartment building (18,862 SF footprint) with associated parking and site utilities, sewer, water, stormwater management, landscaping and lighting. The property is on a secondary street in the Lebanon Dowtown District.

A closed drainage system internal to the site has been designed to capture the runoff generated by the impervious areas of the project; the parking, roofs, sidewalks, and patios. During pre-application meetings with the municipality, the stormwater methodology was reviewed briefly. It is proposed to pre-treat stormwater runoff from the development then discharge it into the municipal system in Spencer Street.

Responsible Party

Owner: Brookline Opportunities, LLC (c/o Jake Tamposi)*

Address: PO Box 847, Holis, NH 03049

Phone: (978) 419-1699

Email: jake.tamposi@gmail.com

*Responsibility shall be conveyed to any future owners, heirs, or assigns

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually; once following snow-melt (spring) and once following leaf-drop (fall):

- Deep Sump Catch Basins
- ADS Water Quality Unit

The following practices shall be inspected annually following snow-melt (spring):

- Culverts
- Catch Basins

Stormwater Practices – Maintenance Guidelines

Pretreatment Practices
(Inspected twice a year)

Deep Sump Catch Basin
Maintenance Requirements:

- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth;
- Cleanout of the accumulated material in deep sump catch basins, and drainage manholes should be accomplished by vacuum pumping. Cleanout should be performed during dry weather; and

If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed in conformance with applicable state and federal regulations.

Treatment Practices
(Inspected twice a year)

ADS Water Quality Unit
Maintenance Requirements:

- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the pipe depth;
- Cleanout of the accumulated material in the WQU should be accomplished by vacuum pumping. Cleanout should be performed during dry weather
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed in conformance with applicable state and federal regulations.

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:

- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:

- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and

- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed in conformance with applicable state and federal regulations.

System Components

Invasive Species
Maintenance Requirements:

- If any invasive species grow on-site, they shall be killed using spray herbicide
- Responsible Party should contact a local nursery to determine the best alternative for removing the invasive species.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control or food crops. They also can arrive as “hitchhikers” among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs Inspected	Maintenance Required

Inspection Checklist

Date:	**Project Name:** The Muse Apartments
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection ☐ 2nd Yearly Inspection	BMP's to be inspected: All BMP's to be inspected: Treatment Practices & Pretreatment Practices

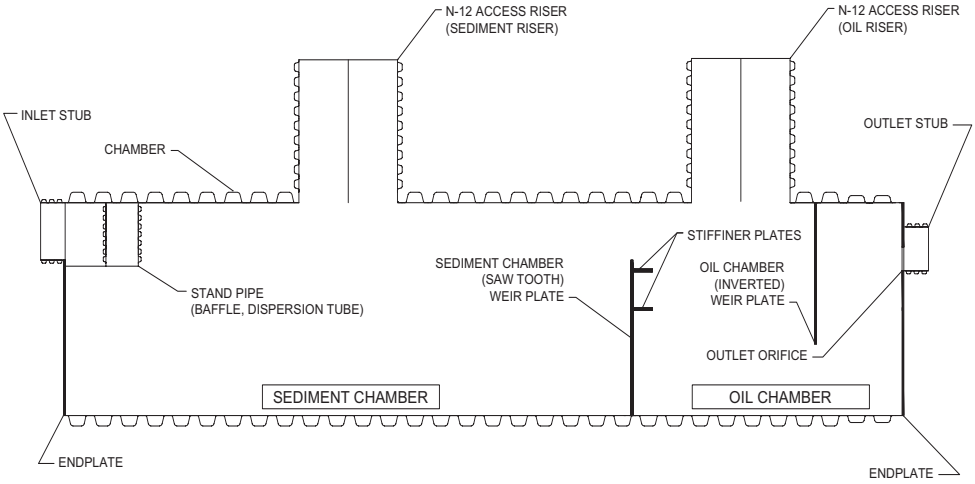
BMP* **Refer to following Inspection & Maintenance Plan for BMP location**		Maintenance Required	Corrective Action Needed and Notes
1	CB #1	☐ Yes ☐ No	
2	CB #2	☐ Yes ☐ No	
3	CB #3	☐ Yes ☐ No	
4	DMH#1	☐ Yes ☐ No	
5	CB #4	☐ Yes ☐ No	
6	CB #1002	☐ Yes ☐ No	
7	CB #5	☐ Yes ☐ No	
8	DMH #2	☐ Yes ☐ No	
9	DMH #3	☐ Yes ☐ No	
10	CB #1010	☐ Yes ☐ No	
11	ADS WQU Raisers	☐ Yes ☐ No	

*Best Management Practices – see Inspection & Maintenance Plan for locations.
** Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the City of Lebanon upon request

Stormwater Quality Units
Inspection & Maintenance

Description/Basic Function

The ADS water quality unit harnesses the proven concepts utilized in municipal stormwater treatment systems and transforms it into a compact water quality unit. The unit is ideal for storm water applications including gas stations and fast food restaurants; this system gives you a highly effective BMP solution.



Risers

The ADS Water Quality Unit consists of two risers. 24” (600 mm) risers are centered over sediment and oil chambers. These two risers provide access to the individual chambers of the Storm Water Quality Unit for maintenance and inspection. Entry into the water quality unit should be considered an OSHA confined space and appropriate guidelines should be followed.

Maintenance Overview

The purpose of maintaining a clean and obstruction free Water Quality Unit is to ensure intened performance. Excessive sediment or debris could reduce the efficiency of the system. A company specializing in such activities should perform inspection and maintenance of the Water Quality Unit.

Inspection / Maintenance Frequency for the ADS Water Quality Unit

- Inspected quarterly (4 times a year) and after major storm events.
- Cleaned (pumped and pressure washed) as indicated by the sediment level in Table 1, or annually.
- Site or surrounding site conditions may require more inspections and maintenance.

Inspection

An inspection should be performed when the system is installed. This allows the owner to measure the invert prior to accumulation of sediment. This survey will allow the monitoring of sediment build-up without entering the system, thereby reducing the need for confined space entry. Documentation of pre-inspection data should be captured.

Procedures

1. Inspect the bypass structure for blockage. Inspect the diversion structure and weir for damage and sediment buildup. Any damage should be repaired and sediment should be removed as required.
2. Locate the Water Quality Unit risers, locate the risers. The risers will be 24” (600 mm) in diameter.
3. Remove the lid of each riser. It is recommend that this be done one at a time so an open riser is not left exposed during inspection or maintenance of the other risers.
4. In the 24” (60 mm) riser over the Sediment Chamber, inspect the amount of floatable debris. Then measure the sediment buildup with a measuring device such as a Sludge Judge® Also inspect that the inlet pipe does not have any blockage. Blockage inspection is better suited after unit is vacuumed. Any confined space entry would be done through this riser and OSHA requirements must be followed.
5. In the 24” (600 mm) riser over the Oil Chamber, measure/inspect the oil depth.
6. Inspect structure and components for any damage.
7. Replace all riser lids.

Maintenance

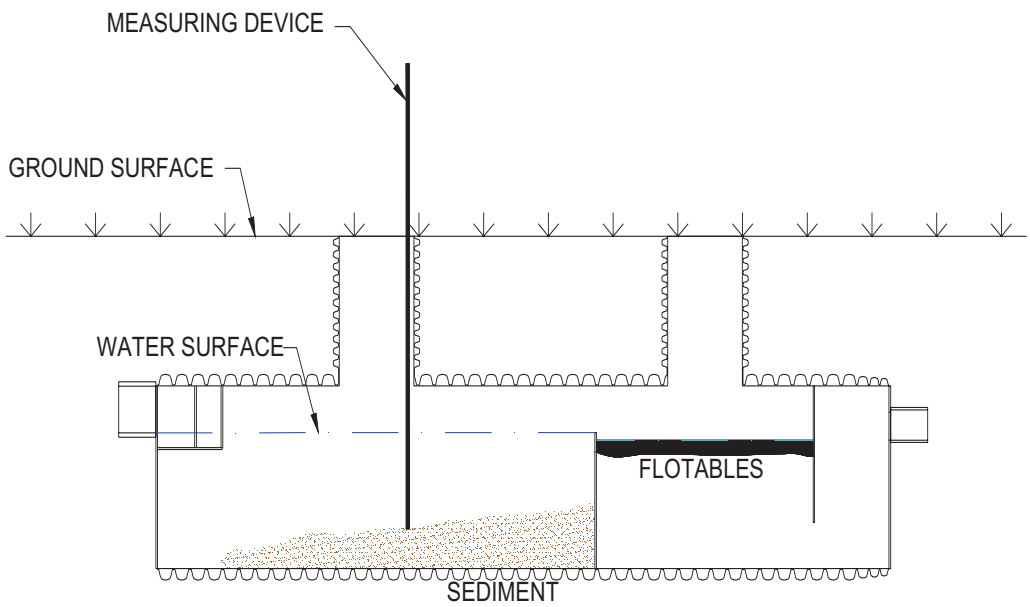
Cleaning should be performed if **sediment volume has reduced the storage area by 20% or if the depth of sediment has reached approximately 25% of the diameter of the structure (See Table 1 for cleanout depth information).** Furthermore, the system may need cleaning in the event a spill of a foreign substance enters the unit.

Inspection Procedures (Measuring Sediment Depth)

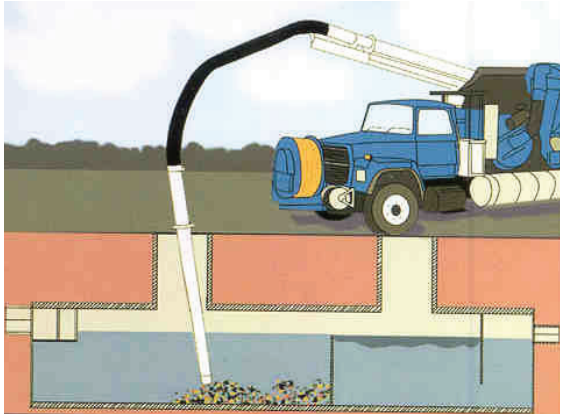
1. Lower measuring device into sediment riser of unit.
2. Read measurement at ground surface.
3. Subtract the current measurement reading from the distance between the ground surface to the invert of the SWQU (obtained when unit was first installed or is clean).
4. Compare calculated difference to the respective value in Table 1. If resulting value is equal to or greater than the respective value on the Table 1, maintenance shall be performed. The figure below illustrates the inspection procedure.

Table 1
Sediment Depth at Cleanout

Model Number	Diameter in. (mm)	Sediment Depth in. (mm)
3620WQ	36 (900)	9 (225)
3640WQ	36 (900)	9 (225)
4220WQ	42 (1050)	10 (250)
4240WQ	42 (1050)	10 (250)
4820WQ	48 (1200)	12 (300)
4840WQ	48 (1200)	12 (300)
6020WQ	60 (1500)	15 (375)
6040WQ	60 (1500)	15 (375)



Cleaning Procedures



1. Insert vacuum hose into bypass Structure and pump out. Inspect bypass Structure for any damage.
2. Insert vacuum hose into 24” (600 mm) riser and pump out the Sediment Chamber. Pressure wash this Chamber if needed. Inspect for any damage.
3. Insert vacuum hose into other 24” (600 mm) riser. This will pump out the Oil Chamber. Pressure wash this Chamber if needed.
4. Refill water quality unit with water. Inspect the inlet pipe for any blockage, the weir plate for damage, and for any structural damage.
5. Replace all riser lids.

The owner or operator is responsible for meeting all federal, state, and local laws and regulations during the maintenance and clean out operations.

Material Disposal

Owners are responsible for complying with all federal, state, and local regulations when disposing of material collected from the storm water quality unit. Water and sediment from cleanout procedures should not be dumped into sanitary sewer.

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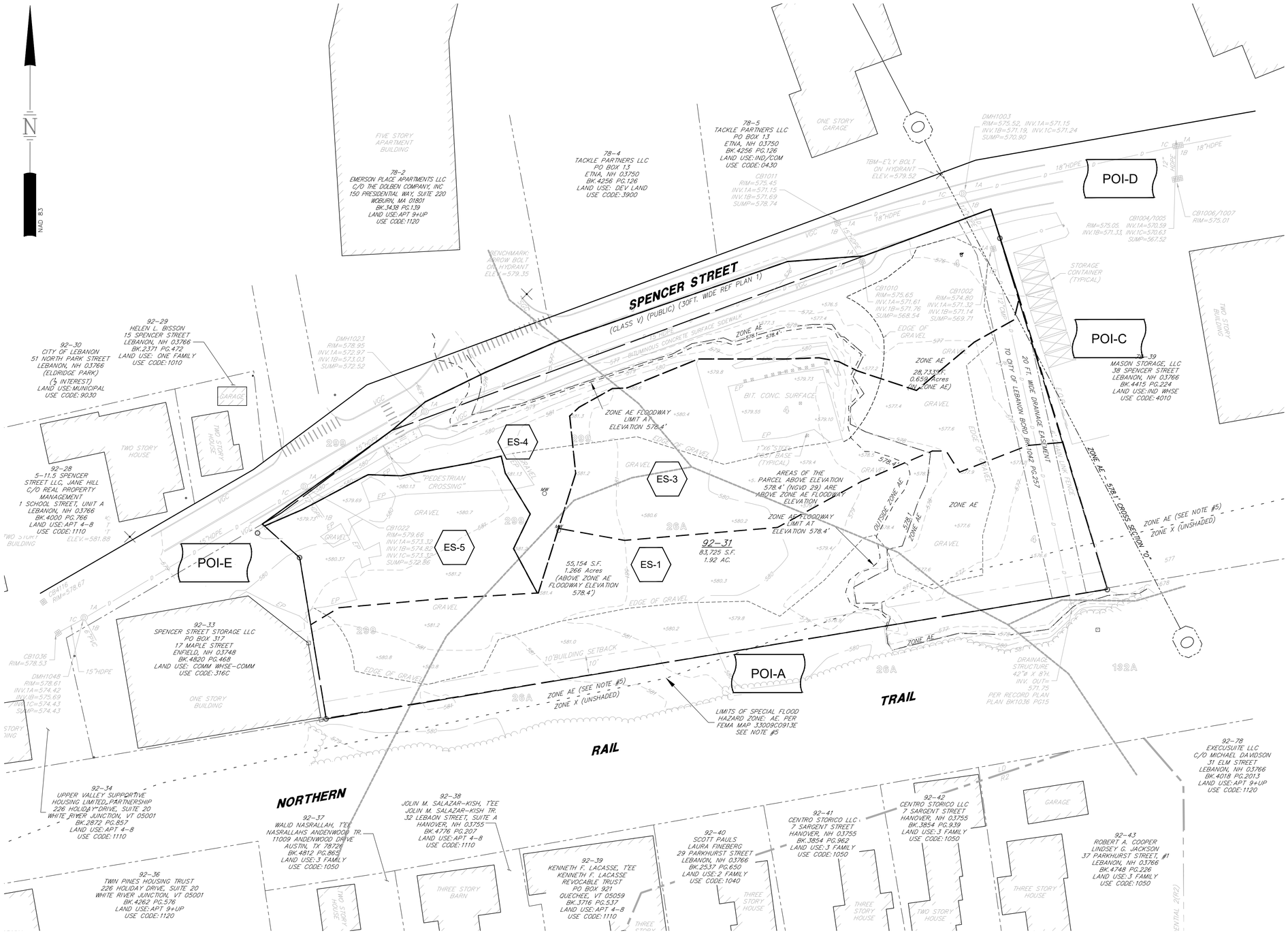
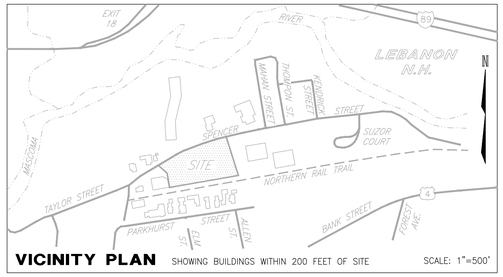


LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH



VICINITY PLAN SHOWING BUILDINGS WITHIN 200 FEET OF SITE SCALE: 1"=500'

NOTES

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 A
   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 RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
   POST-CONSTRUCTION RUNOFF CN: CN=84
   IMPERVIOUS SURFACE AREA: 1.4± AC

SOIL PHASE LEGEND (PERCENT)

A	B	C	D	E	F
0–3	3–8	8–15	15–25	25–50	50+

SOIL LEGEND (PER USDA NRCS WEB SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	DRAINAGE CLASS
4	POOTATUCK VERY FINE SANDY LOAM	B	MODERATELY WELL
26A	WINDSOR LOAMY SAND, 0% – 3% SLOPES	A	EXCESSIVELY
132A	DARTMOUTH SILT LOAM, 0% – 3% SLOPES	C	MODERATELY WELL
299	UDORTHENTS, SMOOTHED		

SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

PRE-DEVELOPMENT DRAINAGE MAP

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**

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK

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FILE	DR	JED	FB	–	
96202.01	CK	NG	CADFILE	96206-01 DRAINAGE	D-01

Aug 12, 2024 - 9:11am
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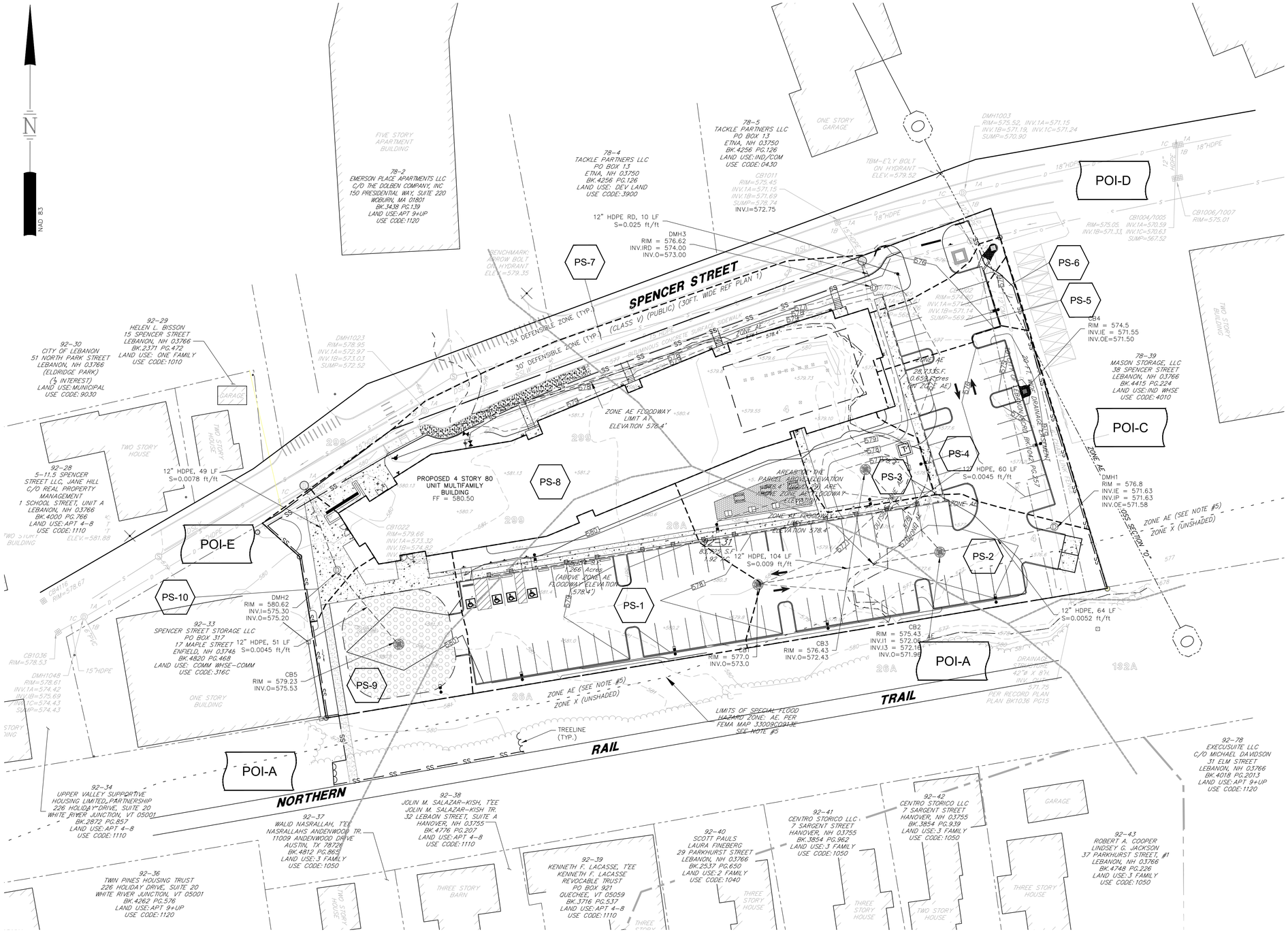

LEGEND

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- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- POI-1 — POINT OF INTEREST
- PS-1 — SUBCATCHMENT AREA
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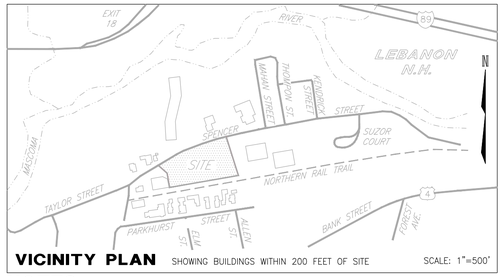

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SOIL PHASE LEGEND (PERCENT)

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SITE DEVELOPMENT PLANS

TAX MAP 92 LOT 31

POST-DEVELOPMENT DRAINAGE MAP

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**

HORIZONTAL SCALE 1"=30'
30 15 0 30

REV.	DATE	DESCRIPTION	DR	CK
1	8/26/2024	CITY REVIEW	JD	NG

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	CK NG	CADFILE	96206-01 DRAINAGE	

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DRAFT

LEBANON PLANNING BOARD
SPECIAL MEETNG - SITE VISIT
0 BARROWS ST, LEBANON, NH
TUESDAY, AUGUST, 6th 2024 5:30 PM

MEMBERS PRESENT: Andrew Faunce (Chair), Richard Ford Burley (Vice Chair), Jeremy Rutter, Patrick Kennelly, Brandon Hill, Kathie Romano

MEMBERS ABSENT: Karen Zook (City Council Rep),

STAFF PRESENT: Nathan Reichert (Planning and Development Director)

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1. CALL TO ORDER

Chair Faunce called the meeting to order at 5:31pm.

2. PUBLIC HEARING ITEMS

A. City of Lebanon, 0 Barrows Street (Tax Map 77, Lot 106), zoned R-3: Applicant requests (i) a Conditional Use Permit per Sections 310.2 and 509 of the Zoning Ordinance for a proposed 5-unit cottage development and (ii) Site Plan Review for the first phase of the development. PB2024-33-CUPSPR

Chairman Faunce opened the public hearing for the 0 Barrows Street application on the pavement at the entrance to the site. Mayor McNamara and Rod Finley, PE represented the application for the site walk. Opening comments were made by Director Reichert explaining the process of the site walk.

Engineer Finley introduced the project, took several questions from the audience and discussion took place. Members of the Board, the Applicant and the Public participated.

The group moved around the property stopping to discuss the proposed infill project stopping at southwest property line to examine site conditions and to discuss the proposal.

The group then proceeded to walk and climb into and out of the 650 square foot wetland that the project proposes to fill. All members of the Board present traversed the wetland and returned to the parking area off of Barrow Street.

Discission ensued once again and more questions were posed and answered by the Board, The Applicant, and the Public.

It was announced that further discussion of the project is scheduled at a public hearing at City Hall on Monday August 12th 2024 at 6:30 PM in the City Council Chambers.

2. ADJOURNMENT

A MOTION was made by Mr. Rutter to adjourn the meeting at 6:14pm. The motion was seconded by Mr. Kennelly.

****The MOTION was approved (6-0).***

The meeting was adjourned at 6:14pm.

Respectfully submitted,
Nathan Reichert
Director Planning and Development

DRAFT

LEBANON PLANNING BOARD
SPECIAL MEETING - SITE WALK
WEDNESDAY, AUGUST 7, 2024 - 5:30 PM
174 HANOVER STREET EXTENSION

MEMBERS PRESENT: Andrew Faunce (Chair), Richard Ford Burley (Vice Chair), Jeremy Rutter, Patrick Kennelly, Brandon Hill, Kathie Romano

MEMBERS ABSENT: Karen Zook (City Council Rep),

STAFF PRESENT: Nathan Reichert (Planning and Development Director), Tim Corwin Planning and Development Dept Director, Catheryn Hembree, Associate Planner.

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1. CALL TO ORDER

Chair Faunce called the meeting to order at 5:30pm.

2. PUBLIC HEARING ITEMS

A. 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: Site plan review for a proposed 474-unit multi-family residential development totaling +/- 731,600 sq. ft. in size, consisting of 11 buildings together with parking, utilities, landscaping, access, and other related site improvements. PB2024-22-SPR

Chairman Faunce made introductory comments about conducting the meeting and opened the public hearing for the 174 Hanover Street (Brick Yard) application on the green at the south entrance to the site off of Hannover Street.

David Fenstermacher, PE from VHB introduced his consulting team and the application to the meeting. He explained that the meeting would proceed from the entrance to the old Brick Kilns, up the slope to the area where the buildings are proposed to be built at the top of the rise overlooking the pond. At each stop the group would field questions about the site.

Several questions from the audience and discussion took place. Members of the Board, the Applicant and the Public participated.

The group moved and stopped 8 times on the site and answered various questions at each stop from the public and board members. Members of the VHB consulting team along with Engineer Fenstermacher sought to answer the questions to the satisfaction of the questioner with a focus

on questions focused on the site conditions. Questions about other topics of the application were referred to the Public Hearing set to be conducted at the Planning Board's regular meeting scheduled for August 12th 2024.

The group then proceeded to walk and climb over various obstacles along the way including a large boulder field, dense trees and underbrush as well as a stream crossing. All members of the Board present traversed the boulders, underbrush and wetlands exiting the property on the north entrance to the site off of Hannover Street.

Discission ensued once again and more questions were posed and answered by the Board, The Applicant, Abutters and the Public.

Planning Board members Rutter and Romano were excused by the Chair to depart the meeting.

Various members of the Public exited the meeting at the time that the Chair excused Rutter and Romano. The Chair also announced that the meeting would continue to proceed back down Hannover Street and to the walking bridge that crosses Interstate 89. Various members of the public, the VHB consulting team and the remining Board members walked to the southern side of the I89 pedestrian bridge.

On the south side of the I89 pedestrian bridge the group assembled for further discussion and questions with the public, abutters, consultants, and board members participating.

It was announced that further discussion of the project is scheduled at a public hearing at City Hall on Monday August 12th 2024 at 6:30 PM in the City Council Chambers.

2. ADJOURNMENT

A MOTION was made by Mr. Ford-Burley to adjourn the meeting at 7:15pm. The motion was seconded by Mr. Kennelly.

****The MOTION was approved (5-0) With Faunce, Ford-Burley, Kennelly and Hill voting Aye.***

The meeting was adjourned at 7:15pm.

Respectfully submitted,
Nathan Reichert
Director Planning and Development

DRAFT

LEBANON PLANNING BOARD
REGULAR MEETING MINUTES
Council Chambers, City Hall OR
Remote Via Virtual Platform
August 12, 2024
6:30 PM

MEMBERS PRESENT: **Karen Zook (Council Rep), Andrew Faunce (Chair), Richard Ford Burley (Vice Chair), Jeremy Rutter, Kathie Romano, Patrick Kennelly, Brandon Hill**

MEMBERS ABSENT: **Doug Whittlesley (Alt Council Rep)**

STAFF PRESENT: **Nate Reichert (Planning & Development Director); Tim Corwin (Deputy Planning & Development Director); Mayor Timothy McNamara; Rod Finley (City Engineer)**

---

1. CALL TO ORDER – Chair Faunce called the meeting to order at 6:30 PM

Mr. Corwin reviewed the City's meeting in-person and remote attendance policies and procedures.

2. NOTICE OF REGIONAL IMPACT

Mr. Corwin reviewed the three applications received prior to the deadline for the September 9, 2024, Planning Board meeting.

- **LVM Residential, LLC, 1 Foundry Street (Tax Map 91, Lot 263) and 43 Mechanic Street (Tax Map 106, Lot 34), zoned LD:** Pursuant to Section 9.1 of the Site Plan Review Regulations, applicant requests modifications to a previously approved Site Plan (PB2022-36-SPR & PB2023-38-SPA) for a proposed multi-family housing development. Applicant proposes to reduce the number of dwelling units from 183 to 148 and to eliminate construction of 2 of the 4 proposed residential buildings, together with related modifications to parking, utilities, landscaping, access, and other site improvements. Applicant also requests a Conditional Use Permit pursuant to Article III, Section 307.9 of the Zoning Ordinance to allow a parking area in the front yard of the lot. **PB2024-35-SPA**

- **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**

- **Jennifer Caine Russell & Nick Russell (applicants), Spencer Street Storage, LLC (property owner), 10 Spencer Street (Tax Map 92, Lot 33), zoned LD**: Applicants request a Conditional

Use Permit pursuant to Article III, Section 307.2 of the Zoning Ordinance to allow an art studio use within the existing building. **PB2024-37-CUP**

Mr. Corwin stated that staff recommends that the application for The Muse Lebanon, LLC, 20 Spencer Street, does have the potential for regional impact and that the Regional Planning Commission and the surrounding New Hampshire communities be notified accordingly, per statute. Staff recommends that the other two applications do not have the potential for regional impact.

A MOTION was made by Richard Ford Burley that the applications for LVM Residential, LLC, 1 Foundry Street (Tax Map 91, Lot 263) and 43 Mechanic Street (Tax Map 106, Lot 34), zoned LD, and Jennifer Caine Russell & Nick Russell (applicants), Spencer Street Storage, LLC (property owner), 10 Spencer Street (Tax Map 92, Lot 33), zoned LD do not have the potential for regional impact; and that the application for The Muse Lebanon, LLC (applicant), City of Lebanon (property owner), 20 Spencer Street (Tax Map 92, Lot 31), zoned LD does have the potential for regional impact. The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

3. OTHER BUSINESS

A. Marlee Dixon, 78 Bank Street (Tax Map 92, Lot 106), zoned R-O: Request per Section 213.8.B of the Zoning Ordinance to waive the impact fees assessed for the conversion of a previous office use to a one-family dwelling. **PB2024-30-AAD**

The applicant explained that the building has historically been used as a single-family home and a law office. For 83% of the structure's lifetime, it was used as a single-family home. Owners of the property when it was a single-family home have paid the water and sewer bills for much longer than the law office paid those same fees as a commercial building. The request is to waive the impact fees assessed with the conversion of the structure as an office use back to a single-family dwelling use.

Mr. Corwin explained that the Planning Board is authorized to grant waivers from the assessment of impact fees based on projects that include other contributions to public facilities, or when such fee would, due to interference with constitutionally vested rights, pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit or intent of the Ordinance. Pursuant to Section 213.9.A., a party aggrieved by a decision of the Zoning Administrator can appeal to the Planning Board.

The Board discussed that it believes the impact fees were assessed appropriately in this case. The spirit and intent of the Ordinance is to pay for the addition of new people to the population of the City and the services they will require. This seems to be coupled with the proposed change of use to a single-family home.

Mr. Corwin explained that during any change of use of a structure, the impact fee assessed for the new use is counted at the rate that the existing use would have paid. Utilizing the impact fee schedule that was in place when the rates were set, the total fee assessed would have been $6,421.88. The fee in this case has been reduced to $5,311.76.

A MOTION was made by Richard Ford Burley that the Planning Board not grant the waiver of impact fees in this case. The motion was seconded by Patrick Kennelly.
****The MOTION was approved (7-0)***

4. PUBLIC HEARING ITEMS:

A. 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: Site plan review for a proposed 474-unit multi-family residential development totaling +/- 731,600 sq. ft. in size, consisting of 11 buildings together with parking, utilities, landscaping, access, and other related site improvements. **PB2024-22-SPR - Continued from July 8, 2024**

Chair Faunce explained that this is a significant project for the City and will play out over several public hearings. Tonight, the Board will review a walkthrough of the site in plan-view and introduce sectional views of the plan. The Board may also walkthrough how the application confirms to the PURD requirements and a potential discussion regarding density of the project.

Dave Fenstermacher, PD, VHB, reviewed the PURD calculation of 423 units with an allowable 12% bonus. The site contains both 174 and 238 Hanover Street, with approximately 126 acres. There are natural resource areas located within the site. This was previously used as a brick manufacturing site, closed in 1974. There are three beehive kilns on the site and the applicant understands the historical importance of these, so they are not included within the limit of disturbance for the site. The conceptual site review was presented in November 2022, and comments were made regarding a desire for a unit mix diversity, the importance of the wetlands, and concerns were expressed regarding the geometry at Old Etna Road. Since then, a lot to the north was purchased to avoid larger wetland impacts. Revised plans show 474 units, focused on three-bedroom units, and 787 parking spaces with more than 500 of them in covered podium parking. The plan is proposed to be phased, which will be discussed further at a future meeting. Regarding site amenities, trails are shown around the pond and pavilions/playgrounds/etc. are proposed for community space. A fiscal impact study was submitted with the application, showing a net fiscal impact of $1.4M for the City.

Mr. Fenstermacher reviewed the site cross sections. He then reviewed the PURD criteria. Regarding Section 501.1.E.1.A, which relates to the delineation of site resources and required open space, the natural resources were verified and delineated. Vernal pools were not found on site. There are slopes in excess of 25% that were mapped using the City of Lebanon GIS-based mapping system. The site does not contain any significant ecological areas. The project was submitted to the New Hampshire Natural Heritage Bureau and two wildlife species of concern were found. The applicant is working to address these with Fish & Game. Review of the Grafton County Natural Resources and Conservation Service website showed that the site does not contain any areas of agricultural soils of national or statewide significance. Although the Densmore Brick Company is part of the history for the site, no records were found that indicate protected historic or cultural structures. A floodplain study will be performed as part of the required State permitting and the site will be checked for wildlife corridors and associated species. Given the nature of the site, avoiding the impacts of the 25% slope were difficult but the applicant is prioritizing wetland and stream protection. The applicant purchased additional land to the north to protect the wetlands. Based on the calculations, the project will require 12.02 acres of open space dedicated for public benefit. The applicant is focused on open space that is large and continuous, with limited breaks. The open space conserves several wetland and stream areas, as well as some slopes in excess of 25%. The space contains wooded areas that could realistically be used for foresting activities. The open space also provides opportunities for outdoor recreation, such as existing trail networks, and will provide scenic enjoyment for the public. The plan provides street access to the historic resources of the site. The proposed open space includes the 1:1 slope being constructed behind some of the proposed buildings. This will not be forested or natural and so many need to be reconsidered for the calculation.

The Board suggested that the pond be mapped in order to know the general depths and bottom material. The pond is part of the historical site of the brickyard. Mr. Fenstermacher stated that there is no intention to touch the pond as part of this project. The pond is approximately 65' deep.

The Board asked if the existing single-family home on the site can be preserved and repurposed as it is over 200 years old. Gil Aleixo, project architect, stated that he does not believe this building can be preserved, as it is in the location where the facilities building is proposed with an apartment above it.

Mr. Fenstermacher stated that, regarding the proposed location of the buildings, these are generally located on the west side of the pond to provide distance from Hanover Street and the abutters, and to avoid impacts to resources. The trees and forest stands are being maintained to the maximum extent possible in order to preserve natural views and screen both tenants and abutters from undesirable views. Regarding alignment of roads and driveways, the project driveway loops through the development and connects to Hanover Street at two locations, driven by minimizing impacts to wetlands. The applicant purchased the additional parcel to the north to minimize impacts to the wetland. The PUD statement of impact is that the proposed development will work to minimize wetland impacts and is not expected to impact the floodplain. The project has been designed to minimize impacts on abutters and enhance the community by providing much needed housing, mainly tucked away from the public road. The building scale will be less noticeable and consistent with similar developments along the nearby Route 120 corridor. Landscaping will be in accordance with all applicable City requirements and is intended to screen the development from abutting properties and the public right of way, in addition to aesthetically enhancing the proposed site entrances and its interior.

Regarding the sufficiency of the proposed parking for the intended use, Mr. Fenstermacher stated that a mix of covered parking and surface parking is proposed and is based on the 1.5 parking spaces per apartment unit requirement. To help offset the additional impervious area resulting from the increased parking below the building, the applicant is proposing the spots be 8'x18' to allow for more parking under the buildings. The proposed 8' wide parking space is pending approval by the City Engineer. The accessible spaces are provided in accordance with ADA requirements and there is a significant investment being made in the compact electric vehicle charging spaces proposed. Regarding adequacy of streets and sidewalks, a traffic study prepared was coordinated with the City and DOT to address some of the comments previously made, including stop signs to help with traffic control. There is an active DOT corridor improvement project in this area and the applicant has been part of those discussions.

Mr. Fenstermacher stated that, regarding the statement of sufficiency, availability, and capacity of utility for water, fire protection, sewer and storm, all of these were coordinated with the City. The applicant will complete a hydrant flow test for fire protection and will work with solid waste disposal companies for removal of solid waste. The drainage design is proposed to meet the City and State AoT standards and is focused on matching or reducing the existing peak flow rates. The applicant's sewer allocation application is pending. Regarding the statement of impact on storm drainage from the site onto abutting properties, the applicant's stormwater management is focused on mitigating stormwater quality and quantity to make sure there is no impact to abutters. Regarding a statement of noise control, methods and procedures, the proposed residential use noise levels are not proposed to be significant over the existing conditions. Regarding a statement on capacity of the school system, this was part of the fiscal impact study, and the school Superintendent does not expect that the potential increase in student population will impact class sizes and did not express any capacity concerns. The site is located on Hanover Street across from the Hanover Street School and Lebanon High School, so no busing impacts are anticipated. The fiscal impact statement analyzing the impact of the development was previously reviewed, and a full impact analysis was prepared showing the net benefit and the net impacts. The project is shown to result in a net positive for the City. Regarding a statement on any special Fire, Police, and Public Safety concerns due to location, no concerns are anticipated based on the site improvements and use.

Mr. Fenstermacher stated that, in terms of Section 501.2, the open space and conservation of open space, the project has an appropriate density and looks to protect important natural resources. The proposed 12 acres of open space will maintain and feature the remaining brick kilns to pay homage to the site's history. The project will hopefully provide additional access to the nearby mountain bike trail network. The proposed open space is in the area near an established connected network of conservation land and trails. The project was sited to minimize impacts, resulting in in no fills of any wetlands. The project looks to encourage development of environmentally sensitive outdoor recreational land use and to protect the pond and areas around it. Regarding flexibility and residential development to provide for diversity of housing types, the buildings in this area are residential and the proposed mid-rise apartment buildings are consistent with the surrounding types of buildings. This project will provide opportunities for the development of workforce and affordable housing, adding up to 474 much needed residential units for the families of the Upper Valley. The project looks to avoid developing any areas of the site that are ill suited for development, such as those with poor soil conditions, high water tables, etc. The plan is designed to work within the natural topography, to minimize ground and steep slope disturbance, utilize natural features, and minimize impacts to natural resources. The project will encourage more suitable forms of development by facilitating the design, construction, and maintenance of housing, streets, utilities, and public services in a more economic and efficient manner by integrating the new development into the existing built and natural environment. The intention is to complement the neighborhood and provide much needed housing to support the local economy. The scale of the buildings will be aesthetically pleasing, as most of the buildings are well set off Hanover Street. The project will promote reduction of impervious surface areas and sustainable stormwater management practices.

Mr. Corwin suggested that the Board consider the criteria in Section 501.1.J.1.A.2. when evaluating the open space and granting the Conditional Use Permit. He noted that the applicant should also address the 501.1.G. 1-9 design guidelines at some point. Chair Faunce suggested that the applicant consider addressing those guidelines at a future meeting. He asked for comments from other Land Use boards/commissions and the public at this time.

Nicole Ford Burley, Chair Heritage Commission, presented a brief history of the Brickyard. The site has been recognized as a Lebanon Historic Landmark. In reviewing the project, the Commission posed several preliminary questions largely regarding how the site has been researched for this project, including what research has been conducted, how the kilns were evaluated, and what sort of documentation will be completed. VHB has in-house architectural historians and will also be consulting with Monadnock Archaeology in assessing the historic nature of the site. She stated that she believes further research is necessary. She asked that the Commission continue to be allowed to comment on this project.

Bill Lamb, Ward 3, stated that the Brickyard is the last and most impactful step that could be taken to cause damage to the City. This proposed development does not adequately respect the land. The owners of this property have squished the units into a small portion of land that would better suit approximately 100 units. It is unclear if in approving this plan, the Planning Board will set a precedent for future development. This project needs to be reduced in size and set back further from the pond. Based on other recently approved developments in the City, there are new units allowing in excess of 2,000 renters. If built as proposed, this project would house another 1,000 renters. The City should consider how this concentration of new rental units will impact the health of the City. Once new residents have filled these units, fewer than 35% of citizens will own their homes. Approval of these rental apartment units will seal the fate for this City. The request is a reduction in units and a move toward more owner-occupied homes for the City.

David Kroner, 194 Hanover Street, stated that he is concerned that the drainage from this project will overflow the surrounding land. There are existing beavers in this area. The holding tanks proposed may be inadequate.

Mary Davis, Ward 2, stated that Evans Drive is a two-lane road and trying to get children to school is already a traffic nightmare. Adding 700 new cars to this area will impact Exit 18, Route 120, Evans Drive, Heater Road, Mt. Support Road, and Old Etna Road. There are safety issues for walkers and cyclists in this area. The impact fees will not begin to address the issues of widening the roads, traffic lights, etc. Lebanon needs single-family homes with land, instead of McMansions and apartments.

Mary Ann Masto, Ward 2, stated that the developer has requested relief regarding the building restrictions from 45' to 55' for eight buildings of four stories each. The developer has stated that the design is intended to be similar to other multifamily developments built along the Mt. Support corridor. Any continuation of this same type of development should be avoided, as it is not a visual asset to Lebanon. Regarding drainage, she asked about the stormwater runoff impact during the last heavy storm from this site. Due to climate change, the rainfall per storm will likely only increase. She asked why Hanover is encouraging this apartment development, as it is generally more selective in its own Town than Lebanon is. She stated that it is unclear if a Wildland Fire Hazard assessment has been completed. She requested that the proposed development be completely rejected.

Ernst Oidtmann, Ward 2, stated that this is all about money. This is a disastrous project in terms of the natural environment. It will endanger wildlife corridors. People driving in this area will wonder if they are in Los Angeles and it will not be an attractive development. He asked where the drainage and utilities will be on the site. If approved, the remaining acreage should be protected with a conservation easement. He asked if there will be any blasting as part of this project. The City should consider working on alternative affordable housing in the center instead of tearing up pieces of land.

Nicole Barns, 269 Hanover Street, stated that she has children that attend the elementary school that this proposed project would be across from. Construction was just completed at the elementary school to make it large enough to fit the needs of the existing children, so she finds it interesting that the Superintendent does not believe there would be an influx from this additional housing. There would also be an impact to busing, as the children from this new development would eventually go to middle school. Traffic in this area is already a major issue to the point that the neighbors must regularly notify the Police Department as the area is used as a cut through. She does not see how adding stop signs will change anything. There is a lot of wildlife in this area and building would destroy it. Some years ago, another project was shut down due to all the trash bins that were proposed close to the School and she asked how that would be handled for this project. She stated that she is firmly against this project.

Bethany Truell, Hanover Street Extension, echoed the concerns already expressed. There are additional concerns with safety for pedestrians and cyclists. Stop signs may not be in the best interest of the traffic plan. She asked about the proposed dumpsters for the site. Mr. Fenstermacher stated that the dumpsters are planned to be screened.

There was no additional public comment at this time.

A MOTION was made by Richard Ford Burley to continue this hearing to Monday, September 9, 2024, at 6:30pm, at the Kilton Library. The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

C. Edwards Properties, LLC, 135 Heater Road (Tax Map 78, Lot 41), zoned IND-L: To allow the conversion of a dwelling unit to an office use, applicant requests (i) a Conditional Use Permit

pursuant to Section 303.2 of the Zoning Ordinance to expand the office use approved by Conditional Use Permit on April 15, 2024 (PB2024-02-CUP), and (ii) pursuant to Section 9.1 of the Site Plan Review Regulations, a modification to the site plan approved on April 15, 2024 (PB2024-14-SPR). **PB2024-27-CUPSPA - Postponed from July 8, 2024**

The Board addressed this item at this time.

Mr. Corwin noted that the applicant is requesting an additional postponement.

A MOTION was made by Chair Faunce to continue this hearing to Monday, September 9, 2024, at 6:30pm, at the Kilton Library. The motion was seconded by Richard Ford Burley.
****The MOTION was approved (7-0)***

B. XYZ Dairy, LLC, 0 Beyerle Street & 51 Crafts Avenue (Tax Map 58, Lot 18 & Tax Map 58, Lot 19), zoned R-3: Request for a Conditional Use Permit pursuant to Sections 310.2 and 509 of the Zoning Ordinance for a proposed cottage development with 16 dwelling units and a community building, together with related site improvements. **PB2024-31-CUP - Continued from July 8, 2024**

Mr. Corwin stated that the Board was previously interested in making a motion which was then drafted by Richard Ford Burley. This was drafted as a positive motion and submitted to the Board for review.

A MOTION was made by Richard Ford Burley to pass the motion presented in the Board's packet regarding Agenda Item 4.B., with the date in 2. revised from July 12, 2024, to July 8, 2024; and to change the word in II. 4. from "design" to "designs", otherwise entirely as found in the publicly available packet. The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

D. XYZ Dairy, LLC, River Park Drive (Tax Map 44, Lots 21 - 30 & Tax Map 44, Lot 7), zoned CBD, IND-L and R-3: Applicant requests a 2-year extension of the River Park Subdivision approval (PB2011-01-FMAJ) and Site Plan approval (PB2010-25-SPR), as most recently amended on September 9, 2019 (PB2018-34-SPA) and extended on October 12, 2021 (PB2021-29-EXT). **PB2024-34-EXT**

Kathie Romano recused herself from this item.

Chair Faunce noted that the application as submitted was absent some information that was presented to the Board this evening and was also absent a phasing plan. These are necessary components. He suggested a motion to continue this hearing to allow for the recently submitted information to be reviewed.

Chet Clem, Principal, XYZ Dairy, LLC, stated that the phasing plan has not changed. He included the 2021 extension as that is exactly what is being requested.

A MOTION was made by Chair Faunce to continue this hearing to Monday, September 9, 2024, at 6:30pm, at the Kilton Library. The motion was seconded by Richard Ford Burley.
****The MOTION was approved (6-0)***

Kathie Romano retook her seat.

E. City of Lebanon, 0 Barrows Street (Tax Map 77, Lot 106), zoned R-3: Applicant requests (i) a Conditional Use Permit per Sections 310.2 and 509 of the Zoning Ordinance for a proposed 5-unit

cottage development and (ii) Site Plan Review for the first phase of the development. **PB2024-33-CUPSPR**

Mr. Corwin explained that the Site Plan Review regulations regulate land development. 'Land Development' is a defined term in the regulations, including site work, grading, clearing, and filling associated with proposed development. In this case, as outlined in the Deputy City Manager's letter that was included with the application materials, the City intends to prep the land but the design for the proposed future residential development is still in progress. Mr. Corwin stated that he added into the legal notice a request for a Conditional Use Permit early in the process, but this should have been removed. The City is not asking for a Conditional Use Permit for a proposed cottage development. All that is being requested is permission to engage preliminary site work for a proposed future cottage development. This development would then have to come back to the Board in the future when the designs are ready for a Conditional Use Permit demonstrating compliance with all criteria. The Board should consider determining if the proposed site work is being done in the correct manner.

The Board agreed to table this item until later in the meeting when Mayor McNamara was available.

5. APPROVAL OF MINUTES: July 8, 2024; July 22, 2024; June 24, 2024

A MOTION was made by Jeremy Rutter to approve the meeting minutes of June 24, 2024, as amended.

AMENDMENTS:
Page 8, Line 17: Change the documentary film name from "Hand to Brick" to "Brick of Hand."
To remove the additional "n" from "Lebanon" throughout the document.

The motion was seconded by Richard Ford Burley.
****The MOTION was approved (7-0)***

A MOTION was made by Richard Ford Burley to approve the meeting minutes of July 8, 2024, as amended.

AMENDMENTS:
Page 4, Line 10 – XYZ Dairy application was identified as agenda item 3.F. but was moved up to 3.A. and should be noted as such, with a note that items were taken out of order.
Page 7, Line 1 – change the word "is" to "are identified in"
Page 6, Line 24 – redact the number of units listed as 4"
Page 8, Line 28 – change "extensions" to "extension"
Page 8, Line 40 – change "the motion was approved 7-0," to "the original motion, as amended, was approved 7-0"

The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

A MOTION was made by Jeremy Rutter to approve the meeting minutes of July 22, 2024, as amended.

AMENDMENTS:
Page 1, Line 18 – insert "The Board," after "reminded"
Page 2, Line 43 – change "M" to "Mayor McNamara"
Page 2, Line 44 – change "tired," to "underground"
Page 3, Line 4 – delete the word "that"

Page 3, Line 17 – insert the word "asked"
Page 3, Line 19 – change the word "hangers" to "hangars"
Page 3, Line 21 – change the word "save" to "cut"
Page 3, Line 40 – insert "Road" after "Meriden"
Page 5, Lines 28 and 34 – change "Committee" to "Commission"
Page 5, Line 35 – delete the word "Committee"

The motion was seconded by Richard Ford Burley.
****The MOTION was approved (6-0-1, with K. Romano abstaining)***

E. City of Lebanon, 0 Barrows Street (Tax Map 77, Lot 106), zoned R-3: Applicant requests (i) a Conditional Use Permit per Sections 310.2 and 509 of the Zoning Ordinance for a proposed 5-unit cottage development and (ii) Site Plan Review for the first phase of the development. **PB2024-33-CUPSPR**

The Board retook this item at this time.

Rod Finley, PE, City Engineer, explained that this property was two lots owned by the City which have been merged. The piece of right of way of Barrows Street has also been merged into the lots, making a large enough property to propose a cottage development. The entire northern section of the lot is a large wetland complex, and there is a small, isolated wetland on the southern side of the property. The site will need to be brought up in grade to make a potential building platform for the cottages. As there were multiple other projects going on in the City, there was additional material available that has been stockpiled and could be used for this project. A wetlands application has been filed with the State to fill in 645 square feet of the isolated wetland and staff has spoken to the Conservation Commission about this proposal. Erosion and sediment controls have been detailed in the packet. The permit will allow trees to be cut on site. Staff will come back to the Board regarding the full site plan layout for the cottages and all the items required by the site plan.

Mayor McNamara stated that the intention is to sell these cottages at cost to Lebanon City and School District employees, with any resales at a capped price to keep them perpetually affordable. The City owns additional land of this nature that could be used for similar projects. The initial round of sales will likely be done through a lottery, but future sales will try to focus on Lebanon City and School District employees.

There was discussion regarding some of the cottages proposed to face the road frontage instead of into the common open space. Mayor McNamara stated that the draft design was only to prove the concept. A finalized architectural design will orient the cottages as required.

Brandon Hill asked about proposed land development that eliminates wetlands for a potential good cause. Mr. Corwin stated that any applicant could proceed in the way the City is requesting to proceed but would have to come before the Board for all preliminary site work. The Board can address concerns relating to such a development, such as bonding for certain improvements. Richard Ford Burley stated that, if this project does not move forward, the City will still own the land, and it could be used in a different way.

Wanda Bachmann, 29 Winter Street, expressed support for the project.

The Board closed the public hearing for this item.

A MOTION was made by Richard Ford Burley that the Lebanon Planning Board finds the Site Plan Review application for the City of Lebanon PB2024-33-SPR regarding 0 Barrows Street (Tax Map 77

Lot 106) is complete enough to accept jurisdiction and commence review, if belatedly. The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

A MOTION was made by Richard Ford Burley that the Lebanon Planning Board approve the Site Plan Review application of the City of Lebanon, regarding 0 Barrows Street (Tax Map 77, Lot 106), zoned R-3, PB2024-33-SPR, to complete preliminary site work including clearing, grading, and filling for a proposed future residential development, as shown on a plan set titled, "NHDES Wetland Application Plans for the City of Lebanon Residential Development Project – 0 Barrows Street," dated April 5, 2024, prepare by Pathways Consulting, LLC, Pathways Project No. 13377, including any and all submissions and testimony provided for and during the public hearing.

In support of its decision, the Board finds that the applicant has submitted plans, testimony, technical data, and information that together satisfactorily demonstrate compliance with the applicable requirements of the Site Plan Review Regulations, except as may reasonably be addressed through the imposition of certain conditions of approval set forth below.

This approval is subject to the following conditions:

1. ***The applicant shall implement and maintain NHDES Site Specific Best Management Practices before, during, and after construction.***
2. ***Edge-of-disturbance fencing shall be installed and maintained before and during any site work, to be verified by the City Engineer or City's third-party inspector on site.***
3. ***Prior to the start of any construction activities on the property, the applicant shall obtain or update (if appropriate) any required State approvals including but not limited to a wetland impact permit from the NH Department of Environmental Services.***
4. ***This approval is for the site work depicted in the plan set only. It does not approve the conceptual 5-unit cottage development depicted on Sheet 4 of the plan set. Any such cottage development will require a Conditional Use Permit per Sections 310.2 and 509 of the Zoning Ordinance. Likewise, any site work conducted on the property other than the work depicted on Sheet 3 of the plan set will require additional site plan review from the Planning Board.***

The motion was seconded by Jeremy Rutter.
****The MOTION was approved (7-0)***

6. ADJOURNMENT:

A MOTION was made by Brandon Hill to adjourn the meeting. The motion was seconded by Kathie Romano.
****The MOTION was approved (7-0)***

The meeting automatically adjourned at 9:01 PM.

Respectfully submitted,
Kristan Patenaude
Recording Secretary