



LEBANON CONSERVATION COMMISSION
MARCH 13, 2025 - 6:30 PM
COUNCIL CHAMBERS, CITY HALL 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: 843 553 836#). If you have trouble accessing this meeting, please [email Mark Goodwin](#)

2. Approval of Minutes

- A. February 13, 2025

3. Open to the Public

4. Permit Review

- A. **Re: The City of Lebanon, 28 S Main St/Rt 12A & 0 Railroad Ave (Tax Map 86-18, 72-5 and 86-57)** - Review and Comment on NHDES Wetland Minor Impact Application to replace the two-lane vehicle bridge (NH Rt. 12A/South Main St) which passes over the Northern Railroad, realignment of the road immediately south of the bridge, and improvement to the incorporated access road connecting Rt 12A to the railroad underpass in West Lebanon, NH. Proposed wetlands impacts are 6,943 SF of permanent impact and 2,160 SF of temporary impact.
CC2025-02 (40 minutes)
- B. **Proposed Wetland Impact - Conceptual Review:** 0 Labombard Rd (Map 64, Lot 34) **(20 minutes)**

5. Study Items

- A. Goals and Funding for 2025 (continued) (60 minutes)
- B. Consideration and possible action on Zoning change recommendations to City Council

6. Committee Reports

- A. Biodiversity Group (Invasives)
- B. Stewardship
- Ranger
-Trail Coordinator
-Monitors and Stewards
- C. Wild about Lebanon
- D. Amphibian Crossings
- E. LUCT/Current Use
- F. Other Subcommittees

7. Other Business

- A. FYIs

- B. Follow Up
- C. Workshops and Educational Opportunities

8. Future Agenda Items

9. 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.

DRAFT

LEBANON CONSERVATION COMMISSION
REGULAR MEETING MINUTES
Remote Via Microsoft Teams
LebanonNH.gov/Live
February 13, 2025
6:30 PM

MEMBERS PRESENT: Sarah Riley (Chair), Bruce James, (Vice Chair), Susan Almy (Alt.),
Erling Heistad, Travis Talbert (Alt.)
Barbara Hirai, Chris Johnson, Donald Lacey, Ernst Oidtmann

MEMBERS ABSENT: Sean Dittrich (Alt.)

STAFF PRESENT: Mark Goodwin (GIS Coordinator), Nate Reichert, Director, Planning &
Development

1 **1. CALL TO ORDER:** Chair Riley called the meeting to order at 6:36 PM.

2
3 **2. APPROVAL OF MINUTES:**

4
5 A. January 9, 2025

6 B. January 27, 2025 – Special Meeting

7
8 **3. OPEN TO THE PUBLIC:**

9
10 *Mr. Donald Lacey MOVED to approve January 9, 2025 Minutes as amended. The motion was*
11 *Seconded by Ernst Oidtmann.*

12
13 **Amendments:**

14 Page 3, Line 2, change to **In the last decade, their focus pivoted from purchasing land to helping**
15 **landowners with expenses related to conservation easements**

16 Page 3, Line 5, strike the first sentence

17 Page 3, Line 8, for clarity add **ARM** fund

18 Page 3, Line 14, change to **Starr Hill**

19 Page 3, Line 33, change to **The Conserving Your Land Options for New Hampshire Homeowners,**
20 **published by the New Hampshire Land Trust Coalition**

21 Page 3, Lines 43, 44, strike 2nd sentence about identifying their priorities

22 Page 3, Line 48, strike “ their resources”, change to **much effort**, change “could be a resource to is a
23 resource, and instead of she has had incredible crossing success, change to **Harris Center has an**
24 **incredibly successful crossing program**

25 Page 4, Line 1, strike successful (e.g. near...) and replace with **active on Pine Tree Cemetery Road**

26 Page 4, Line 11 add after position “**and the Mascoma River** and Lebanon has one LAC representative

27 Page 4, Line 26, change to **Education and Awareness of native and invasive species**

28 Page 5, Line 33, strike with the City Council and add **of the** Conservation Commission

Page 5, Line 36-38, strike and add to prior line **There will be a special meeting of the Lebanon Conservation Commission to prepare concise statements on the three proposed zoning amendments that will be placed on the March ballot.**

Page 6, Line 20 change Walk for Wildlife to **Wild about Lebanon** and delete the last sentence

Page 6, Line 23 after 10:00AM add **the Tree Advisory Board will have a winter tree ID stroll with Liz McKinley.**

** The vote on the MOTION was approved unanimously (7-0)*

Mr. Ernst Oidtmann MOVED to approve January 27, 2025 Minutes as amended. The motion was **Seconded by Mr. Chris Johnson.**

Amendments:

Page 1, Line 31 and Page 2, Lines 1&2, for clarity change to **The City Council modified the extent of this proposed map change at their last meeting. Some of the natural area and steep slopes were excluded from the proposed MC2 District.**

Page 1, Line 3, change to **there are natural areas**

Page 1, Line 6, strike **for a Facilities...**

Page 2, Line 43, change to **expanding the Starr Hill...**

Page 3, Line 26 strike got to and replace with **had the opportunity to**

Page 3, Line 47 change to **the Planning Board's proposed modifications...**

Page 4, Line 5, correct to **Volvo**

Page 4, Line 15, correct to **Rix**

Page 4, Line 28-30, change to **2017 proposed Zoning amendment**

Page 4, Line 30 strike **protections**

Page 4, Line 39, change Zoning Board to **Planning Board**

Page 5, Line 8, change #20 to **#4**

Page 5, Line 11, change #4 to **#20**

Page 5, Line 19, correct spelling to Hirai

** The vote on the MOTION was approved unanimously (7-0)*

4. PERMIT REVIEW: None

5. STUDY ITEMS:

Items A and C were discussed first.

A. Review & Comment Proposed Zoning Amendment: 24 Labombard Rd. (map change: RL-3 to GC-1)(15 minutes)

Mr. Nate Reichert and Mrs. Hatch attended this meeting to discuss the buildable acreage on the Hatch property. Mr. Reichert stated that their request is simply a technical clean up, and he is looking for this Commission's comment and advice before sending this request back to the City Council.

Ms. Hirai thanked Ms. Hatch for conserving the other large portion of her property. Chair Riley said they should make a statement to the Council. Mr. Goodwin said that whatever the outcome of the zoning amendment discussion is that Mrs. Hatch's property will be rezoned correctly as she has requested.

1 The Conservation Commission recommends approval of the proposed rezone of the property at 24
2 Labombard Road from RL-3 to GC-1, assuming the adjacent properties are similarly rezoned.

3
4 It was noted that this matter does not go before the voters.

5
6 ***Mr. Donald Lacey MOVED to approve the above statement***

7
8 ***Seconded by Mr. Ernst Oidtmann***

9
10 ****The MOTION was approved unanimously***
11

12 **C. Review & Comment Proposed Zoning Amendment: Research Laboratory (Research Lab**
13 **added to Table of Uses)**

14 Mr. Reichert explained the background of the need for this zoning amendment. It is necessary to create a
15 definition for research laboratory (currently not defined) in addition to the use change, to include
16 commercial or general commercial one district and central business district
17

18 Mr. Reichert proposed the following definition for Research laboratory: “A facility for scientific research
19 development analysis and testing in various technologies intensive fields of science including but not
20 limited to biotechnology, pharmaceuticals, genetics, plastics, polymers, resins, coating, fibers, fabrics,
21 films, heat transfer and electronics”.

22
23 Mr. Reichert said this change will also send a positive message that Lebanon is welcoming of such types
24 of uses within our community. This has been a major economic driver in our community for the last two
25 decades and can continue to be in the future. The definition can always be changed in the future.

26
27 Vice Chair James said that the description of research labs is clear and that there are environmental
28 safeguards built in, such as OSHA, so in terms of emission of pollutants, especially from a lab, it should
29 be fine, as long as these regulations are enforced.
30

31 Mr. Oidtmann inquired whether this is a generally accepted definition with the State of New Hampshire
32 or elsewhere in the country? Mr. Reichert explained that while there was no definition within New
33 Hampshire they went to the Planner’s Dictionary (access via the Planners’ Association) and used a
34 template/hybrid wording from other communities, that seems to fit well.
35

36 The Conservation Commission has no objection to adding the use and formalizing the definition.
37

38 ***Mr. Ernst Oidtmann moved to approve the above statement***

39 ***Seconded by Mr. Don Lacey.***

40
41 ****The vote on the MOTION was approved unanimously***
42
43

44 **B. Review & Comment to the City Council on proposed Zoning Ordinance Amendments:**

45 Continued from December 12, 2024 and January 27, 2025 (60 minutes)
46

47 **Amendment #4:** The Conservation Commission recommends approval of the Centerra parcels proposed
48 to change from Ind-L to CBD. Additionally, the ConCom recommends they work with the Planning
49 Department and other stakeholders such as the Town of Hanover and the Upper Valley Land Trust, to

1 incorporate the environmental recommendations from the Northern Lebanon study into the final zoning
2 requirements, prior to changing the Centerra area parcels that are proposed to change to GC-1.

3 *Ms. Hirai moved to approve the above statements*

4 *Seconded by Vice Chair James*

5 ** The vote on the MOTION was approved unanimously*

6 The Commission agrees with the Planning Board's recommendation to exclude the car dealership area
7 (near Exit 18) from the area proposed to be converted to GC-1 from Ind-L.

8 *Chair Riley moved to approve the above statement*

9 *Seconded by Mr. Don Lacey*

10 **The vote on the MOTION was approved unanimously*

11 The Conservation Commission does not recommend the changes suggested by the Planning Board to add
12 the parcels on the west side of Etna Rd to the proposed amendment.

13 *Vice Chair James moved to approve the above statement*

14 *Ms. Hirai seconded.*

15 **The vote on the MOTION was approved unanimously*

17 *Mr. Heistad moved to extend the meeting until 9:30PM*

18 *Ms. Hirai seconded the motion*

19 **The vote on the MOTION was approved 6-1*

20 And lastly, all along Labombard Rd. and the section east of Etna Rd. proposed to change from Ind-L to
21 GC-1, the Conservation Commission does not recommend making the zoning change until further
22 research and evaluations are conducted in terms of water, wildlife, topography and related matters.

23 *Vice Chair James moved to approve the above*

24 *Seconded by Mr. Heisted.*

25 **The vote on the MOTION was approved unanimously*

28 **D. Boston Lot & Signal Hill Management Plan Action Item Update (30 minutes)**

31 **6. CONCEPTUAL REVIEW:**

33 **A. Proposed Wetland Impact – Conceptual Review:** Mt. Support Rd)Map 24, Lot 1, Plot 100)
34 Mr. Dave Fenstermacher, VHB representative, spoke at 9:17PM along with Jake Tinus. They quickly
35 reviewed maps which were part of their package, showing wildlife areas, wildlife corridors and density,
36 they had limited time.
37

They are contemplating another 250 units and potentially 300-400 people in one- and two-bedroom units.

Chair Riley MOVED to extend the meeting another 5 minutes to 9:35PM.

Seconded by Mr. Heistad

***The vote on the MOTION was approved 6-0**

Mr. Oidtmann asked if there is any plan to conserve the remaining 52 acres. These are important to the well-being of people and the environment, Mr. Fenstermacher said that within those 52 acres, there are currently two 300' dedicated wildlife corridors, and they have density restrictions as they move up the hill. These requirements were part of the first phase.

Chair Riley says that if this goes forward, she/ConCom would be hopeful that local mitigation options are actively sought, even though it is not the preferred option. Further, they are hopeful that this mitigation money would be put back to benefiting protecting natural resources in Lebanon.

She also questioned what the wetland scientist has to say about the connectivity of these wetlands. They still serve a function in Lebanon. Mr. Tinus said that wetland 3 and wetland 5 both have expressions of groundwater whereas the others are likely formed in depressional areas.

Mr. Lacey asked about a large wetland area on page 90, Figure 2 and proposed that it could easily be put into a conservation easement if they have no further aspirations to build on that property. This could be done even if the conservation easement did not satisfy the DES requirement; VHB could pay DES and still contribute to the ARM fund.

Ms. Hirai reiterated the environmental impact of these developments, so she is hopeful that any mitigation money goes into the ARM fund to help do good things for Lebanon, in the future.

Chair Riley ended by saying sometimes projects are too big for the spot. For example, this project is proposing a complete loss of wetland 5. She also suggested they (VHB) speak to the local Upper Valley Land Trust, and she requested a site visit for the Conservation Commission.

7. COMMITTEE REPORTS: NONE

A. Biodiversity Group (Invasives)

B. Stewardship

-Ranger

-Trail Coordinator

-Monitors and Stewards

C. Wild about Lebanon

D. Amphibian Crossings

E. LUCT/Current Use

F. Other Subcommittees

8. OTHER BUSINESS:

A. FYIs

B. Follow Up

1 C. Workshops and Educational Opportunities
2
3

4 **9. FUTURE AGENDA ITEMS:**
5

6 Ms. Hirai said that Upper Valley Land Trust is doing a walk and teaching people how to walk boundaries.
7 Sarah will get information out about this (per Ms. Hirai).

8 Ms. Hirai also said that on February 1st, they had a Wild about Lebanon walk, and there will be another
9 one on March 1, at Signal Hill.
10

11 **10. ADJOURNMENT**
12

13 **No MOTION*
14

15 **The meeting was adjourned at 9:36 PM by Chair Riley.*
16

17 Respectfully submitted,
18 Cinda Mersel
19 Recording Secretary
20
21
22
23



Date: January 24, 2025

D&K Project No. 624124L4
NHDOT Project No. 13558A

To: City of Lebanon
51 N. Park Street
Lebanon, NH 03766

Attn: Sarah Riley
Chair, Conservation Commission

Subject: Standard Dredge & Fill Wetlands Permit: Minor Impact Project
NH Rt. 12A Bridge Replacement/Road Realignment

Dear Chair Riley,

Please find the enclosed permit application package for your consideration. We will remain in contact with City representatives as review by the NH Department of Environmental Services progresses, and do not hesitate to reach out with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tyson Morrill', is written over the word 'Sincerely,'.

Tyson Morrill, MSc

Environmental Scientist/Wildlife Biologist

DuBois-King Inc.

208 Union Ave

Laconia, NH 03246

Office: (603) 524-1166 Ext 5014

Direct dial: (603) 418-6817

tmorrill@dubois-king.com

Standard Dredge & Fill Wetlands Permit Application



NH Route 12A Bridge Replacement & Road Realignment West Lebanon, NH

NHDOT Project No. 13558A

January 2025





INTRODUCTION MEMORANDUM

Date: January 24, 2025 D&K Project No. 624124L4
NHDOT Project No. 13558A

To: NH Dept. of Environmental Services – Wetlands Bureau

Subject: Standard Dredge & Fill Wetlands Permit: Minor Impact Project
NH Rt. 12A Bridge Replacement/Road Realignment

On behalf of the City of Lebanon (Owner/Applicant, hereby the 'City'), Dubois & King, Inc. (Agent, hereby 'D&K') respectfully submits the enclosed permit application to complete the public infrastructure restoration project which will impact state wetland and surface water resources. In partnership with the NH Department of Transportation, the City proposes replacement of the Rt. 12A/South Main Street bridge over the Northern Railroad, realignment of the adjacent roadway to the south, and improvement to the incorporated access road connecting Rt. 12A to the railroad underpass. The project is located in the western portion of the city of Lebanon, north of I-89 (see attached Locus Map).

Wetland Conditions & Proposed Impacts

Existing conditions reflect over a century of industry where vehicle and railroad infrastructure meet. Delineated palustrine scrub-shrub/emergent wetlands are comprised of historic drainage catchment basins and ditching which have been systematically filled with sediment transported by storm water along Rt. 12A and the railroad bed. Wedged between the railroad's western toe of slope and the paved road's eastern shoulder, the wetland, identified as E-Wetland, is seasonally flooded, partially excavated, comprised of and surrounded by widespread invasive plants, including Purple loosestrife (*Lythrum salicaria*), *Phragmites australis*, Creeping Jenny (*Lysimachia nummularia*), Morrow's Honeysuckle (*Lonicera morrowii*), and Japanese knotweed (*Fallopia japonica*), and lacks rare, threatened, and endangered plant species, resulting in a low-quality system. Once the E-Wetland's volume reaches capacity, intermittent flows pass beneath Rt. 12A via culvert into a similar quality wetland, identified as the W-Wetland.

To improve storm water capacity around the bridge and roadway, a north-to-south drainage ditch is proposed along the roadway's eastern side before being captured in a pocket pond for treatment. Downslope of the pocket pond, excavation of the E-Wetland is proposed to provide adequate grade for flows to reach the road culvert inlet. A narrow band of the wetland will be

excavated, then filled, to install stable road bed material necessary for the roadway realignment. Considering roadside access for ongoing maintenance, a guardrail will not be installed adjacent to the pocket pond. Without a guardrail, a 4:1 shoulder slope is necessary, and to meet adequate elevation for suitable flood storage capacity, the pocket pond location was moved further from the roadside and creates a small permeant impact to the wetland. Downslope, excavation impacts are proposed to increase flood storage capacity, and wetland filling to construct the road bed and shoulder grade during road realignment. Permeant impacts are proposed for 31% of the existing wetland area with a net-excavation volume.

When flow from the E-Wetland passes beneath Rt. 12A into the W-Wetland, transported fine sediments have accumulated in the outlet basin formed by the existing road and abutting residential housing structures. The grade of depositional sediments has determined the existing wetland footprint, comprised of and surrounded by widespread invasive plants, including Japanese knotweed (*Fallopia japonica*), Multiflora rose (*Rosa multiflora*), Oriental bittersweet (*Celastrus orbiculatus*), Morrow's Honeysuckle (*Lonicera morrowii*), and Glossy buckthorn (*Frangula alnus*) and lacks rare, threatened, and endangered plant species, resulting in a low-quality system. During road realignment, the existing 12" cast iron wetland-to-wetland drainage culvert will be replaced by a 24" HDPE culvert, resulting in a small impact footprint where the structure enters the wetland. Permeant impacts are proposed for 1% of the existing wetland.

Immediately west of the Rt. 12A bridge, a constructed subterranean gravel wetland lies beneath the present railroad and derelict railroad yard. Flow becomes daylighted at a 60-inch concrete pipe with a perched outfall, forming a perennial stream that flows approximately 0.1 mile to the Connecticut River. The stream has carved a deep ravine through depositional substrate common throughout the regional Connecticut River basin, forming an eroding bank just below a short access road used to navigate from Rt. 12A to adjacent the railroad. To create a safe, secure roadbed, a retaining wall is proposed to begin at the most stable base available, the ravine bottom along the stream, built up to the current road grade. Public accessibility and safety will be improved with new sidewalks protected by guardrails adjacent to the retaining wall structure, further ensuring benefit to private and public users. None of the delineated stream or wetlands are designated as Prime Wetlands or Priority Resource Areas, and furthermore, neither are documented in the entire project area.

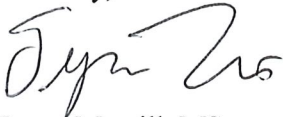
Construction Conditions & Timeframe

Construction is intended to be completed during late 2025. The existing road will remain partially open to traffic in the existing southbound lane while the relocation occurs along the eastern shoulder. This stage will include construction of the drainage ditch and pocket pond, and impacts to the E-Wetland. Upon completion, vehicle traffic will be relocated to the new relocated road section, then removal of the western lane and shoulder will be removed, including completing the replacement of the wetland-to-wetland culvert coupled with impacts to the W-Wetland. Construction of the access road and retaining wall impacting the unnamed stream will

be completed concurrently. Because no fisheries data is present and no fish were observed in the stream, and no rare, threatened, endangered species were documented in the stream or wetlands, restrictions to the construction timeline is not expected to be impacted by permit conditions. The sequence and focus of work to be performed is detailed in the following attached Project Plan sheets: Index of Sheets and General Notes, Project Notes- Sheet 1, General Plan 1-4, Erosion Control Notes, Erosion Control Details 1-2, and Erosion Control Plan 1-4. This project includes additional permitting submitted for review including Alteration of Terrain and Shoreland PBN, therefore, potential comments by reviewing agencies, the LAC and conservation commission are pending. The Owner/Applicant is in the process of acquiring abutter right-of-way permissions which shall be completed prior to construction beginning.

Overall, impacts have been mitigated to the greatest extent possible and are directly associated with the restoration of existing public infrastructure, and therefore, are necessary to restore public safety in West Lebanon.

Sincerely,



Tyson Morrill, MSc

Environmental Scientist/Wildlife Biologist
DuBois-King Inc.

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Section 2	USACE Permit Requirements
Section 3	Project Area Resources: Overview
Section 4	Project Plans
Section 5	Natural Heritage Bureau Review
Section 6	USFWS IPaC Review
Section 7	Tax Parcels & Abutters



Section 1

NHDES Permit Application

Application Fee

- 1.1 NHDES Standard Dredge & Fill Application
- 1.2 Appendix A: Minor & Major Projects
- 1.3 Avoidance & Minimization Checklist
- 1.4 Wetlands Functional Assessments
 - E-Wetland
 - W-Wetland
 - Stream
 - USACE Appendix A: Evaluation supporting documentation





STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION

Water Division / Land Resources Management
[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: Brian Vincent, PE

TOWN NAME: City of Lebanon

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))

Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [Priority Resource Areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

Has the required planning been completed?	☒ Yes ☐ No
Does the property contain a PRA? If yes, provide the following information:	☐ Yes ☒ No
Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHFG) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.	☐ Yes ☒ No
- Protected species or habitat? - If yes, species or habitat name(s): Virginia stickseed - NHB Project ID #: NHB24-2801	☒ Yes ☐ No
Bog?	☐ Yes ☒ No
Floodplain wetland contiguous to a tier 3 or higher watercourse?	☐ Yes ☒ No
Designated prime wetland or duly-established 100-foot buffer?	☐ Yes ☒ No
Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☐ Yes ☒ No
Is the property within a Designated River corridor? If yes, provide the following information:	☒ Yes ☐ No
- Name of Local River Management Advisory Committee (LAC): CT River Joint Commission - A copy of the application was sent to the LAC on Month: 02 Day: 10 Year: 2025	

lrn@des.nh.gov or (603) 271-2147

29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

des.nh.gov

For dredging projects, is the subject property contaminated? • If yes, list contaminant:	☐ Yes ☒ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	☐ Yes ☒ No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats):	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(ii)) Provide a description of the project and the purpose of the project, the need for the proposed impacts to jurisdictional areas, an outline of the scope of work to be performed, and whether impacts are temporary or permanent.	
The replacement of a two-lane vehicle bridge (NH Rt. 12A/South Main St.) which passes over the Northern Railroad, realignment of the road immediately south of the bridge, and improvement to the incorporated access road connecting Rt. 12A to the railroad underpass in West Lebanon, NH. The project is necessary to ensure public safety by restoring failing, existing public infrastructure by a partnership between the City of Lebanon and the NH Department of Transportation. Passing south on Rt. 12A from the bridge, the roadway bends down a hill where two wetlands form at the low points: one to the east ('E-Wetland') and one to the west ('W-Wetland') side of the road. Storm water infrastructure is both undersized and non-existent leading down the hill, resulting in poor quality wetlands below, lined with invasive plants, acting as stormwater catch basins, and at capacity with runoff sediments. The project includes creating a drainage ditch to pass storm water from the bridge down-slope, then captured in a pocket pond for treatment adjacent to the E-Wetland. The proposed impacts begin at the edge of the pocket pond where the wetland will be excavated to remove accumulated runoff sediments (permanent impacts), requiring adjacent work space (temporary impacts). As the road is slightly realigned, the culvert beneath will be replaced, creating a small impact footprint at the outlet into the W-Wetland. An existing vehicle access road provides passage from Rt. 12A to railroad grade beneath the bridge. A gravel wetland was historically constructed beneath the current bridge and railroad interchange, daylighted adjacent to the access road, forming a 1st order perennial stream. Erosion from the stream has formed a ravine which compromises the access road, risking collapse. The construction of a retaining wall is proposed to secure the road base for restored vehicle use. Both road width and structural integrity determined the base of wall location, slightly located beneath the high water mark, resulting in permanent impacts. Overall, restoration of this existing public infrastructure is necessary to restore public safety in West Lebanon.	
SECTION 3 - PROJECT LOCATION Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: 28 S Main St/Rt 12A, 0 Railroad Ave, non-numbered parcel	
TOWN/CITY: Lebanon	
TAX MAP/BLOCK/LOT/UNIT: 86-18, 72-5, 86-57	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: ☒ N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places):	

lrn@des.nh.gov or (603) 271-2147

29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

des.nh.gov

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then complete with the trust or company information.

NAME: **Brian Vincent**MAILING ADDRESS: **193 Dartmouth College Hwy**TOWN/CITY: **Lebanon**STATE: **NH**ZIP CODE: **03766**EMAIL ADDRESS: **brian.vincent@lebanonnh.gov**

FAX:

PHONE: **603-448-3112**ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically. EV**SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))**☐ N/ALAST NAME, FIRST NAME, M.I.: **Morrill, Tyson, R**COMPANY NAME: **Dubois & King, Inc**MAILING ADDRESS: **208 Union Ave**TOWN/CITY: **Laconia**STATE: **NH**ZIP CODE: **03246**EMAIL ADDRESS: **tmorrill@dubois-king.com**

FAX:

PHONE: **603-418-6817**ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically. TRM**SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))**

If the owner is a trust or a company, then complete with the trust or company information.

☐ Same as applicantNAME: **City of Lebanon**MAILING ADDRESS: **51 North Park Street**TOWN/CITY: **Lebanon**STATE: **NH**ZIP CODE: **03766**EMAIL ADDRESS: **shaun.mulholland@lebanonnh.gov**

FAX:

PHONE: **603-448-4220**ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically. SM

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

'Minor impact' project determination was made per Env-Wt 407.03 (Table 407-1) and 514.07(b)(3), and due to sole funding by the NHDOT and City of Lebanon, fee calculation per 407.04(b)(1). Env-Wt 800 does not apply due to impacts categorized using Env-Wt 407.03 guidelines. Construction of the 'access road' retaining wall is necessary due to the constraints in 514.02(c)(5), further described in narrative, plan schematics and descriptions per 514.03(a-b)&(d)(1) and meets criteria described in 514.02(a), (b)(1-5). Minimized impacts to the wetlands were chosen following design guidelines described in 527.04, notably section (e) regarding permanent impacts to the most northern extent of the E-Wetland for construction of the pocket pond. Construction conditions described in the included plans follow guidelines provided in 527.05. Env-Wt 600 & 700 do not apply due to conditions not present in project area. Although the wetland-to-wetland culvert beneath Rt. 12A does not qualify under Env-Wt 900, design considerations followed 904.01(a)(1-9) as shown in plan cross-sections.

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation fact sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

*See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: Day: Year:

(☐ N/A - Mitigation is not required)

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

(☐ N/A – Compensatory mitigation is not required)

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

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For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/rivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent (PERM.) impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary (TEMP.) impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERM. SF	PERM. LF	PERM. ATF	TEMP. SF	TEMP. LF	TEMP. ATF
Wetlands	Forested Wetland			☐			☐
	Scrub-shrub Wetland	1263		☐	806		☐
	Emergent Wetland	1405		☐	667		☐
	Wet Meadow			☐			☐
	Vernal Pool			☐			☐
	Designated Prime Wetland			☐			☐
	Duly-established 100-foot Prime Wetland Buffer			☐			☐
Surface	Intermittent / Ephemeral Stream			☐			☐
	Perennial Stream or River	606	192	☐	46		☐
	Lake / Pond			☐			☐
	Docking - Lake / Pond			☐			☐
	Docking - River			☐			☐
Banks	Bank - Intermittent Stream			☐			☐
	Bank - Perennial Stream / River	3669		☐	641		☐
	Bank / Shoreline - Lake / Pond			☐			☐
Tidal	Tidal Waters			☐			☐
	Tidal Marsh			☐			☐
	Sand Dune			☐			☐
	Undeveloped Tidal Buffer Zone (TBZ)			☐			☐
	Previously-developed TBZ			☐			☐
	Docking - Tidal Water			☐			☐
TOTAL		6943	192		2160		

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☐ **MINIMUM IMPACT FEE:** Flat fee of \$400.

☒ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☐ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):	SF	× \$0.40 = \$
Seasonal docking structure:	SF	× \$2.00 = \$
Permanent docking structure:	SF	× \$4.00 = \$
Projects proposing shoreline structures (including docks) add \$400 =		\$
Total =		\$
The application fee for minor or major impact is the above calculated total or \$400, whichever is greater =		

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

☐ Minimum Impact Project
 ☒ Minor Project
 ☐ Major Project

SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: <u>BV</u> BV	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: <u>BV</u> BV	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: <u>BV</u> BV	The signer understands that: - The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: - Deny the application. - Revoke any approval that is granted based on the information. - If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.
Initials: <u>BV</u> BV	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): <i>Shaun Mulholland</i>	PRINT NAME LEGIBLY: Shaun Mulholland	DATE: 1/22/25
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): <i>Brian A. Vincent</i>	PRINT NAME LEGIBLY: Brian A. Vincent	DATE: 1/22/25
SIGNATURE (AGENT, IF APPLICABLE): <i>Tyson R. Morrill</i>	PRINT NAME LEGIBLY: Tyson R. Morrill	DATE: 01/24/2025

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: <u>Diane Mulholland</u> Diane Mulholland (Jan 22, 2025 15:38 EST)	PRINT NAME LEGIBLY: Diane Mulholland
TOWN/CITY: City of Lebanon	DATE: 01/22/2025

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

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STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS

Water Division/Land Resources Management

Wetlands Bureau

[Check the Status of your Application](#)



RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

APPLICANT'S NAME: Brian Vincent

TOWN NAME: Lebanon

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

BOTH THE E AND W-WETLANDS CURRENTLY FUNCTION AS STORM WATER RETENTION SYSTEMS. THE CREATION OF A DIVERSION DITCH LEADING DOWNSLOPE FROM THE BRIDGE/ROAD INTERCHANGE TOWARD THE E-WETLAND WILL CAPTURE STORM WATER TO BE TREATED IN A NEW POCKET POND, RESULTING IN DECREASED DIRECT INPUT TO THE E-WETLAND. EXCAVATING DECADES OF STORM WATER-DEPOSITED SUBSTRATE FROM THE E-WETLAND WILL RESTORE ITS INTENDED FUNCTION AS A CATCHMENT BASIN BEFORE PASSING THROUGH AN EXISTING CULVERT BENEATH RT. 12/A INTO THE W-WETLAND. DURING ROAD REALIGNMENT, THE CULVERT WILL BE UPGRADED TO ADEQUATELY PASS FLOWS, RESULTING IN RECONSTRUCTION OF THE CROSSING'S OUTLET AS IT ENTERS THE W-WETLAND THAT WILL RESULT IN A SMALL IMPACT FOOTPRINT. DESIGN ALTERNATIVES CONSIDERED THE CONSTRUCTION OF A NORTH/WEST TEMPORARY BRIDGE TO BYPASS THE BRIDGE REPLACEMENT, BUT ADDITIONAL WETLAND AND SHORELAND IMPACTS WERE FOUND TO RESULT. AT ROUTE 12A/RAILROAD INTERSECTION, HISTORIC EFFORTS TO ALLEVIATE GROUNDWATER INFLUENCE RESULTED IN THE CREATION OF A GRAVEL WETLAND LOCATED BENEATH THE INTERCHANGE WITH AN ACCESS ROAD NEAR THE WETLAND'S OUTLET TO REACH THE RAILYARD. THE WETLAND'S OUTLET NOW FUNCTIONS AS A PERENNIAL STREAM, AND OVER A CENTURY OF CHANNELIZATION HAS COMPROMISED THE INTEGRITY OF THE ACCESS ROAD. TO RESTORE THE ROAD'S FUNCTION, BANK STABILITY EFFORTS ARE PROPOSED WHICH INCLUDE A BLOCK WALL BEGINNING AT THE BASE OF THE STEEP RAVINE WITHOUT RESTRICTING FLOW OF THE STREAM. DESIGN ALTERNATIVES CONSIDERED CONSTRUCTION OF A BRIDGE OVER THE STREAM, BUT STABILIZING THE BANKS TO SUPPORT A BRIDGE ON BOTH SIDES OF THE STREAM WOULD RESULT IN MAJOR ECOLOGICAL IMPACTS.

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SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

None are present in the project area.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

Connectivity from the E-Wetland to the W-Wetland will remain; the 12" cast iron existing culvert beneath Rt. 12A will be replaced by a 24" HDPE.

Connectivity in the perennial stream will be maintained due to bank stabilization not entering the stream channel and inhibiting normal flow conditions.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

Proposed impacts to the E-Wetland and W-Wetlands are associated with improving to storm water diversion, treatment, and capacity, while realigning Rt 12A. Along the unnamed stream, collapsing banks adjacent to the upper the access road will require installation of a retaining wall to provide road base stabilization, resulting in impacts to the stream. There are no exemplary natural communities, vernal pools, or habitat and reproduction areas for species of concern. A NH state-threatened species, Virginia stickseed, has been documented nearby the wetlands along the railroad bed, but where the proposed wetland impacts will occur is not suitable habitat and none were observed during a Rare Plant Survey. Although fish passage exists throughout the stream from the Connecticut River to the gravel wetland outlet culvert, no fish assemblage data is recorded and no fish were observed during the wetland delineation. Additionally, low-flow conditions cause the stream to periodically become subterranean, therefore, there is no concern for impacts to fisheries resources.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The project will create temporary access limitations to active construction areas which encompass two small roadside wetlands and a stream buffer, but no permanent impacts will occur to public commerce, navigation, or recreation. The project will improve public transportation by reconstructing failing road and adjacent sidewalks, and along some road shoulder sections, creating wider sidewalks for pedestrians.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

None are present in the project area.

**SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES
(Env-Wt 313.03(b)(7))**

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

None are present in the project area.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

The City of Lebanon's water supply is derived further up in the watershed at the nearby Mascoma Lake. With the impacted wetlands and stream discharging into the CT River, groundwater aquifers will be negatively impacted.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

Reconstruction of the northern access road will require bank stabilization along the steep slope adjacent to the perennial stream. Built of a mechanically stabilized earth material, the retaining wall will be skirted by both native fill and imported stone at the toe of the slope to prevent erosion and degradation of the structure. The extent of the retaining wall was dictated by the need for an adequate road shoulder. The realignment of Rt. 12A resulted in a reduced the turning radius entering/exiting the access road, subsequently minimizing impacts to the stream which would derive from the extent of the retaining wall. Impacts below the ordinary high water mark are minor in nature, and due to the sinuosity present within the observed unconsolidated bottom, negative impacts to flow capacity are not projected.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

No shoreline structures are involved in the project.

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

No shoreline structures are involved in the project.

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

No shoreline structures are involved in the project.

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

No shoreline structures are involved in the project.

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

No shoreline structures are involved in the project.

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

No shoreline structures are involved in the project.

PART II: FUNCTIONAL ASSESSMENT**REQUIREMENTS**

Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).

FUNCTIONAL ASSESSMENT METHOD USED:

USACE Highway Methodology

NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: Tyson Morrill, edited and certified by Luke Powell CWS No. 50

DATE OF ASSESSMENT: 8/7/2024

Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:



For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:



Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.



AVOIDANCE AND MINIMIZATION CHECKLIST

Water Division/Land Resources Management

Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For the construction or modification of non-tidal shoreline structures over areas of surface waters without wetland vegetation, complete only Sections 1, 2, and 4 (or the applicable sections in [Attachment A: Minor and Major Projects \(NHDES-W-06-013\)](#)).

The following definitions and abbreviations apply to this worksheet:

- "A/M BMPs" stands for [Wetlands Best Management Practice Techniques for Avoidance and Minimization](#) dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).
- "Practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

SECTION 1 - CONTACT/LOCATION INFORMATION		
APPLICANT LAST NAME, FIRST NAME, M.I.: Vincent, Brian		
PROJECT STREET ADDRESS: 28 S Main St/Rt 12A, 0 Railroad Ave, non-numbered parcel		PROJECT TOWN: Lebanon
TAX MAP/LOT NUMBER: 86-18, 72-5, 86-57		
SECTION 2 - PRIMARY PURPOSE OF THE PROJECT		
Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	☐ Yes ☒ No

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If you answered "no" to this question, describe the purpose of the "non-access" project type you have proposed:

Provide adequate ditching and treatment structures for storm water derived from Rt. 12A intersecting the railroad at a bridge crossing. The wetlands proposed to be impacted have historically functioned as stormwater retention basins, but the long-time deposition of runoff material has filled the roadside wetlands which no longer function to current infrastructure needs. By implementing the proposed design, stormwater will navigate new roadside ditches and become treated in a new pocket pond which will result in a small amount of permanent impacts at the upper extent. Downslope of the pocket pond, the detention basin wetland is located at the inlet of a culvert which passes flow beneath Rt. 12A. The accumulated substrate will be excavated to better retain ponded stormwater immediately adjacent to the roadside, and partially filled to relocate the road shoulder further east. The existing culvert will be replaced and installation of a proper headwall at its outlet will require slight wetland impacts.

Proposed upgrades to the northern access road will require resolving vulnerable, eroding stream banks adjacent to the narrow access corridor. The installation of a vertical retaining wall will establish a structurally-sound base for the road that will no longer be at risk of eroding into the stream. To provide the necessary road width, the wall's base and supporting toe of slope will create narrow linear impacts below the ordinary high water mark.

SECTION 3 - A/M PROJECT DESIGN TECHNIQUES

Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.

Env-Wt 311.07(b)(2)	For any project that proposes new permanent impacts of more than one acre or that proposes new permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs.	☒ Check ☐ N/A
Env-Wt 311.07(b)(3)	Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1) Env-Wt 311.10(c)(2)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location and design for the proposed project that has the least impact to wetland functions.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impacts to wetland functions are unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	☒ Check ☐ N/A
Env-Wt 313.01(c)(1) Env-Wt 313.01(c)(2) Env-Wt 313.03(b)(1)	No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands.	☒ Check ☐ N/A
Env-Wt 313.01(c)(3)	The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs.	☒ Check ☐ N/A

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Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	☒ Check ☐ N/A
Env-Wt 311.10 A/M BMPs	Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact.	☐ Check ☒ N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	☐ Check ☒ N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	☒ Check ☐ N/A
A/M BMPs	The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed.	☒ Check ☐ N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	☐ Check ☒ N/A
A/M BMPs	The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point.	☒ Check ☐ N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage.	☒ Check ☐ N/A
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	☒ Check ☐ N/A
A/M BMPs	Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges.	☒ Check ☐ N/A
SECTION 4 - NON-TIDAL SHORELINE STRUCTURES		
Env-Wt 313.03(c)(1)	The non-tidal shoreline structure has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structure.	☐ Check ☒ N/A
Env-Wt 313.03(c)(2)	The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe navigation and docking on the frontage.	☐ Check ☒ N/A
Env-Wt 313.03(c)(3)	The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties.	☐ Check ☒ N/A

Env-Wt 313.03(c)(4)	The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.	☐ Check ☒ N/A
Env-Wt 313.03(c)(5)	The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.	☒ Check ☐ N/A
Env-Wt 313.03(c)(6)	The non-tidal shoreline structure has been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.	☒ Check ☐ N/A



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Vincent, Brian

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the [Avoidance and Minimization Written Narrative \(NHDES-W-06-089\)](#) and the [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached to the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Woodland & transportation

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 5

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Tyson Morrill, edited and certified by Luke Powell CWS No. 50

DATE(S) OF SITE VISIT(S): 8/7/2024

DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No

CONFIRM THAT THE EVALUATION IS BASED ON:

☒ Office and

☒ Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in blank if "other"):

☒ USACE Highway Methodology.

☐ Other scientifically supported method (enter name/ title):

lrm@des.nh.gov or (603) 271-2147

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www.des.nh.gov

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: E-Wetland	LOCATION: (LAT/ LONG) 43.642430/-72.311466
WETLAND AREA: 8360	DOMINANT WETLAND SYSTEMS PRESENT: Palustrine
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PSS1Ex, PEM1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? []	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☐ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☒ No
PROPOSED WETLAND IMPACT TYPE: Temp & perm	PROPOSED WETLAND IMPACT AREA: 4173 SF
SECTION 4 - WETLANDS FUNCTIONS AND VALUES (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient Removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) First, determine if a wetland is suitable for a particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal ("Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☒ No	General condition is low due to invasive plants and impervious runoff input (NH Method used)
2	☐ Yes ☒ No		☐ Yes ☒ No	
3	☐ Yes ☒ No		☐ Yes ☒ No	Not associated with perennial or ponded watercourse
4	☐ Yes ☒ No	3, 4, 5, 7, 9, 15	☐ Yes ☒ No	Wetland water level determined elevation of road culvert at outlet
5	☐ Yes ☒ No	4, 5, 7, 10, 13	☐ Yes ☒ No	Spring influence from adjacent railroad bed fill material
6	☐ Yes ☒ No		☐ Yes ☒ No	
7	☒ Yes ☐ No	5, 7, 8, 9, 11	☒ Yes ☐ No	Dense vegetation helps filter for nutrient removal
8	☐ Yes ☒ No	7, 12	☐ Yes ☒ No	Invasive Purple loosestrife
9	☐ Yes ☒ No	1	☐ Yes ☒ No	
10	☒ Yes ☐ No	1, 4, 5	☒ Yes ☐ No	Hardpan from ditch excavation is overlaid by fine sediment deposition from stormwater runoff
11	☐ Yes ☒ No	1, 2, 3, 5, 13, 14, 15	☐ Yes ☒ No	Adjacent topography is defined by surrounding transportation infrastructure bed material
12	☒ Yes ☐ No	1, 12, 32	☐ Yes ☒ No	Spring input is not visible from primary access point due to sedimentation & vegetation growth, but is recognized as a city cultural historic site marked by a monument across the street.
13	☐ Yes ☒ No		☐ Yes ☒ No	

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14	☐ Yes ☒ No	13	☐ Yes ☒ No	
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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by the New Hampshire Fish and Game Department; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE:	

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The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- ☒ Wildlife and vegetation diversity/abundance list.
- ☒ Photograph of wetland.
- ☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

lrn@des.nh.gov or (603) 271-2147

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☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04. Please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH

Wildlife and Vegetation Diversity/Abundance List

August 7, 2024

E-Wetland

Along eastern side of Route 12A/Main Street

Vegetation

Sensitive fern	<i>Onoclea sensibilis</i>
Wrinkle-leaf goldenrod	<i>Solidago rugosa</i>
Morrow's honeysuckle	<i>Lonicera morrowii</i>
False Solomon's seal	<i>Maianthemum racemosum</i>
Wood horsetail	<i>Equisetum sylvaticum</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Creeping jenny	<i>Lysimachia nummularia</i>
Duckweed	<i>Lemna / Spirodela spp.</i>
Apple	<i>Malus spp.</i>
Speckled alder	<i>Alnus incana</i>

Wildlife

Raccoon	<i>Procyon lotor</i>

Wildlife species were not observed in the field at the time of the assessment

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH



E-Wetland

Photo 1. Route 12A northbound pull-off across from house #32 & #34
Facing south showing PEM1E foreground, PSS1Ex background



E-Wetland

Photo 2. Route 12A northbound pull-off across from house #32 & #34
Facing north showing PEM1E foreground, PSS1Ex background
Proposed impacts approximately begin in front of the parked vehicle

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH



E-Wetland

Photo 3. Route 12A northbound pull-off across from house #32 & #34
Facing north from the southern extent of proposed impact area
Road culvert inlet / wetland outlet



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Vincent, Brian

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the [Avoidance and Minimization Written Narrative \(NHDES-W-06-089\)](#) and the [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached to the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: Residential & transportation	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 10	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Tyson Morrill, edited and certified by Luke Powell CWS No. 50	
DATE(S) OF SITE VISIT(S): 8/7/2024	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON: ☒ Office and ☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in blank if "other"): ☒ USACE Highway Methodology. ☐ Other scientifically supported method (enter name/ title):	

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: W-Wetland	LOCATION: (LAT/ LONG) 43.642722/-72.311697
WETLAND AREA: 5860	DOMINANT WETLAND SYSTEMS PRESENT: Palustrine
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PEM1E, PSS1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? []	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☒ Yes ☐ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☒ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☒ No
PROPOSED WETLAND IMPACT TYPE: Temp & perm	PROPOSED WETLAND IMPACT AREA: 192 SF
SECTION 4 - WETLANDS FUNCTIONS AND VALUES (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient Removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) First, determine if a wetland is suitable for a particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal ("Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☒ No	General condition is low due to invasive plants and impervious runoff input (NH Method used)
2	☐ Yes ☒ No		☐ Yes ☒ No	
3	☐ Yes ☒ No		☐ Yes ☒ No	Not associated with perennial or ponded watercourse
4	☐ Yes ☒ No	4, 5, 9, 15	☐ Yes ☒ No	Adjacent land alterations restrict flow at wetland outlet
5	☐ Yes ☒ No		☐ Yes ☒ No	
6	☐ Yes ☒ No	1	☐ Yes ☒ No	
7	☒ Yes ☐ No	3, 5, 7, 8, 9, 11	☒ Yes ☐ No	Dense vegetation helps filter for nutrient removal
8	☐ Yes ☒ No	7	☐ Yes ☒ No	
9	☐ Yes ☒ No	1	☐ Yes ☒ No	
10	☒ Yes ☐ No	1, 4, 5	☒ Yes ☐ No	Runoff from adjacent wetland and stormwater captured in wetland, entirely comprised of fine sediment
11	☐ Yes ☒ No	1, 2, 3, 5, 14	☐ Yes ☒ No	Adjacent topography is defined by surrounding residential/transportation infrastructure bed material
12	☐ Yes ☒ No	1, 12	☐ Yes ☒ No	
13	☐ Yes ☒ No		☐ Yes ☒ No	
14	☐ Yes ☒ No	13, 14, 15	☐ Yes ☒ No	Majority of herbaceous layer is comprised of invasive species

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by the New Hampshire Fish and Game Department; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☐ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☐ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE:	
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- ☒ Wildlife and vegetation diversity/abundance list.
- ☒ Photograph of wetland.
- ☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- ☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04. Please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

lrn@des.nh.gov or (603) 271-2147

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NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH

Wildlife and Vegetation Diversity/Abundance List

August 7, 2024

W-Wetland

Along *western* side of Route 12A/Main Street

Vegetation

Creeping jenny	<i>Lysimachia nummularia</i>
Jewelweed	<i>Impatiens capensis</i>
Glossy buckthorn	<i>Frangula alnus</i>
Silky dogwood	<i>Cornus amomum</i>
Bittersweet nightshade	<i>Solanum dulcamara</i>
River grape	<i>Vitis riparia</i>
Boxelder	<i>Acer negundo</i>
American elm	<i>Ulmus americana</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Japanese knotweed	<i>Fallopia japonica</i>

Wildlife

Raccoon	<i>Procyon lotor</i>

Wildlife species were not observed in the field at the time of the assessment

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH

W-Wetland

Photo 1. Road culvert outlet/wetland inlet



W-Wetland

Photo 2. From behind guardrail
along Route 12A southbound;
facing eastern wetland border
which runs parallel to toe of
roadway slope

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH



W-Wetland

Photo 3. From behind guardrail along Route 12A southbound;
Facing proposed wetland impact area
Road culvert outlet / wetland inlet



W-Wetland

Photo 4. Facing west showing wetland outlet restricted by adjacent land use:
Driveway base fill at house #26 in left background, log pile in right foreground



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Vincent, Brian

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the [Avoidance and Minimization Written Narrative \(NHDES-W-06-089\)](#) and the [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached to the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)	
ADJACENT LAND USE: Industrial & residential	
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No	
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 20	
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Tyson Morrill, edited and certified by Luke Powell CWS No. 50	
DATE(S) OF SITE VISIT(S): 8/7/2024	DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No
CONFIRM THAT THE EVALUATION IS BASED ON:	
☒ Office and	
☒ Field examination.	
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in blank if "other"):	
☒ USACE Highway Methodology.	
☐ Other scientifically supported method (enter name/ title):	

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID:	LOCATION: (LAT/ LONG) /
WETLAND AREA:	DOMINANT WETLAND SYSTEMS PRESENT:
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 	COWARDIN CLASS:
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☐ No if not, where does the wetland lie in the drainage basin? 	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☐ Yes ☐ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☐ Yes ☐ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☐ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☐ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE:	PROPOSED WETLAND IMPACT AREA:
SECTION 4 - WETLANDS FUNCTIONS AND VALUES (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient Removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) First, determine if a wetland is suitable for a particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal ("Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by the New Hampshire Fish and Game Department; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: R2UB1F	STREAM TYPE (ROSGEN): G4
HAVE FISHERIES BEEN DOCUMENTED? ☐ Yes ☒ No	DOES THE STREAM SYSTEM APPEAR STABLE? ☒ Yes ☐ No
OTHER KEY ON-SITE FUNCTIONS OF NOTE: Primary input is from a gravel wetland concentrated through a culvert	
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☒ No	General condition is moderate due to invasive plants and unstable system, but connectivity is beneficial (NH Method used)
2	☐ Yes ☒ No		☐ Yes ☒ No	
3	☒ Yes ☐ No	4, 8, 11, 15	☐ Yes ☒ No	Surface water connection to the CT River, but poor habitat due to erratic flow, mobile substrate
4	☒ Yes ☐ No	4, 8, 9, 14	☐ Yes ☒ No	System can easily pass floodwater but has minimal ability to retain and disipate flow
5	☒ Yes ☐ No	4, 8	☐ Yes ☒ No	Stream is a function of a gravel wetland source
6	☐ Yes ☒ No		☐ Yes ☒ No	
7	☐ Yes ☒ No	1, 2, 8, 9	☐ Yes ☒ No	Transports sediment and runoff directly to the CT River
8	☐ Yes ☒ No	4, 13	☐ Yes ☒ No	Mink, Raccoon tracks observed
9	☐ Yes ☒ No		☐ Yes ☒ No	
10	☐ Yes ☒ No		☐ Yes ☒ No	
11	☐ Yes ☒ No	1, 2, 3, 6, 8, 9	☐ Yes ☒ No	Unstable, eroding banks with sinuous, braided channel
12	☒ Yes ☐ No	1, 30	☐ Yes ☒ No	CT River located 0.1 miles downstream; designated Scenic Byway
13	☐ Yes ☒ No		☐ Yes ☒ No	
14	☐ Yes ☒ No	6, 17	☐ Yes ☒ No	Mink, Raccoon tracks observed

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

- ☒ Wildlife and vegetation diversity/abundance list.
- ☒ Photograph of wetland.
- ☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

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☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04. Please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH

Wildlife and Vegetation Diversity/Abundance List

August 7, 2024

Unnamed stream

Beginning at culvert outlet along the 'access road' located immediately south of the Route 12A/Main Street and railroad intersecting bridge, and ending at the confluence with the CT River.

Vegetation

Red maple	<i>Acer rubrum</i>
Red oak	<i>Quercus rubra</i>
A. Hazelnut	<i>Corylus americana</i>
Silver maple	<i>Acer saccharinum</i>
Boxelder	<i>Acer negundo</i>
Speckled alder	<i>Alnus incana</i>
Red osier dogwood	<i>Cornus sericea</i>
River grape	<i>Vitis riparia</i>
Joe-Pye weed	<i>Eutrochium purpureum</i>
Soft rush	<i>Juncus effusus</i>
Japanese knotweed	<i>Fallopia japonica</i>
Oriental bittersweet	<i>Celastrus orbiculatus</i>
Burning bush	<i>Euonymus alatus</i>

Wildlife

Raccoon	<i>Procyon lotor</i>
A. mink	<i>Neovison vison</i>
Beaver	<i>Castor canadensis</i>
White tailed deer	<i>Odocoileus virginianus</i>
Belted kingfisher	<i>Megaceryle alcyon</i>

Wildlife species were not observed in the field at the time of the assessment

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH



Stream

Photo 1. Facing downstream, approximate proposed impact area located left



Stream

Photo 2. Facing west showing stream confluence with CT River, backwatered beneath crossing

NH Route 12A Bridge Replacement & Road Realignment
West Lebanon, NH



Stream

Photo 3. Located above stream outlet crossing structure
Facing south, CT River on right



Stream

Photo 4. Located above stream outlet crossing structure
Facing north, CT River on left



Appendix A

Wetland evaluation supporting documentation; Reproducible forms.

Below is an example list of considerations that was used for a New Hampshire highway project. Considerations are flexible, based on best professional judgment and interdisciplinary team consensus. This example provides a comprehensive base, however, and may only need slight modifications for use in other projects.



GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

1. Public or private wells occur downstream of the wetland.
2. Potential exists for public or private wells downstream of the wetland.
3. Wetland is underlain by stratified drift.
4. Gravel or sandy soils present in or adjacent to the wetland.
5. Fragipan does not occur in the wetland.
6. Fragipan, impervious soils, or bedrock does occur in the wetland.
7. Wetland is associated with a perennial or intermittent watercourse.
8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
9. Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet.
10. Wetland contains only an outlet, no inlet.
11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
12. Quality of water associated with the wetland is high.
13. Signs of groundwater discharge are present (e.g., springs).
14. Water temperature suggests it is a discharge site.
15. Wetland shows signs of variable water levels.
16. Piezometer data demonstrates discharge.
17. Other



FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

1. Area of this wetland is large relative to its watershed.
2. Wetland occurs in the upper portions of its watershed.
3. Effective flood storage is small or non-existent upslope of or above the wetland.
4. Wetland watershed contains a high percent of impervious surfaces.
5. Wetland contains hydric soils which are able to absorb and detain water.
6. Wetland exists in a relatively flat area that has flood storage potential.
7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
11. Valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland.
12. The watershed has a history of economic loss due to flooding.
13. This wetland is associated with one or more watercourses.
14. This wetland watercourse is sinuous or diffuse.
15. This wetland outlet is constricted.
16. Channel flow velocity is affected by this wetland.
17. Land uses downstream are protected by this wetland.
18. This wetland contains a high density of vegetation.
19. Other

FISH AND SHELLFISH HABITAT (FRESHWATER) — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.



CONSIDERATIONS/QUALIFIERS

1. Forest land dominant in the watershed above this wetland.
2. Abundance of cover objects present.

STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE

3. Size of this wetland is able to support large fish/shellfish populations.
4. Wetland is part of a larger, contiguous watercourse.
5. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retain some open water during winter.
6. Stream width (bank to bank) is more than 50 feet.
7. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
8. Streamside vegetation provides shade for the watercourse.
9. Spawning areas are present (submerged vegetation or gravel beds).
10. Food is available to fish/shellfish populations within this wetland.
11. Barrier(s) to anadromous fish (such as dams, including beaver dams, waterfalls, road crossing) are absent from the stream reach associated with this wetland.
12. Evidence of fish is present.
13. Wetland is stocked with fish.
14. The watercourse is persistent.
15. Man-made streams are absent.
16. Water velocities are not too excessive for fish usage.
17. Defined stream channel is present.
18. Other

Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. The following is an example provided by the National Marine Fisheries Service (NMFS) of an adaptation for the fish and shellfish function.

FISH AND SHELLFISH HABITAT (MARINE) — This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS

1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
2. Suitable spawning habitat is present at the site or in the area.
3. Commercially or recreationally important species are present or suitable habitat exists.
4. The wetland/waterway supports prey for higher trophic level marine organisms.
5. The waterway provides migratory habitat for anadromous fish.
6. Essential fish habitat, as defined by the 1996 amendments to the Magnuson-Stevens Fishery & Conservation Act, is present (consultation with NMFS may be necessary).
7. Other



SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

CONSIDERATIONS/QUALIFIERS

1. Potential sources of excess sediment are in the watershed above the wetland.
2. Potential or known sources of toxicants are in the watershed above the wetland.
3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
4. Fine grained mineral or organic soils are present.
5. Long duration water retention time is present in this wetland.
6. Public or private water sources occur downstream.
7. The wetland edge is broad and intermittently aerobic.
8. The wetland is known to have existed for more than 50 years.
9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

10. Wetland is associated with an intermittent or perennial stream or a lake.
11. Channelized flows have visible velocity decreases in the wetland.
12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
13. No indicators of erosive forces are present. No high water velocities are present.
14. Diffuse water flows are present in the wetland.
15. Wetland has a high degree of water and vegetation interspersion.
16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.
17. Other



NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

CONSIDERATIONS/QUALIFIERS

1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
 5. Wetland saturated for most of the season. Ponded water is present in the wetland.
 6. Deep organic/sediment deposits are present.
 7. Slowly drained fine grained mineral or organic soils are present.
 8. Dense vegetation is present.
 9. Emergent vegetation and/or dense woody stems are dominant.
 10. Opportunity for nutrient attenuation exists.
 11. Vegetation diversity/abundance sufficient to utilize nutrients.
- STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.
12. Waterflow through this wetland is diffuse.
 13. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
 14. Water moves slowly through this wetland.
 15. Other

PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.



CONSIDERATIONS/QUALIFIERS

1. Wildlife food sources grow within this wetland.
2. Detritus development is present within this wetland.
3. Economically or commercially used products found in this wetland.
4. Evidence of wildlife use found within this wetland.
5. Higher trophic level consumers are utilizing this wetland.
6. Fish or shellfish develop or occur in this wetland.
7. High vegetation density is present.
8. Wetland exhibits high degree of plant community structure/species diversity.
9. High aquatic vegetative diversity/abundance is present.
10. Nutrients exported in wetland watercourses (permanent outlet present).
11. "Flushing" of relatively large amounts of organic plant material occurs from this wetland.
12. Wetland contains flowering plants that are used by nectar-gathering insects.
13. Indications of export are present.
14. High production levels occurring, however, no visible signs of export (assumes export is attenuated).
15. Other

SEDIMENT/Shoreline Stabilization — This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.



CONSIDERATIONS/QUALIFIERS

1. Indications of erosion or siltation are present.
2. Topographical gradient is present in wetland.
3. Potential sediment sources are present up-slope.
4. Potential sediment sources are present upstream.
5. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
6. A distinct step between the open waterbody or stream and the adjacent land exists (i.e., sharp bank) with dense roots throughout.
7. Wide wetland (>10') borders watercourse, lake, or pond.
8. High flow velocities in the wetland.
9. The watershed is of sufficient size to produce channelized flow.
10. Open water fetch is present.
11. Boating activity is present.
12. Dense vegetation is bordering watercourse, lake, or pond.
13. High percentage of energy-absorbing emergents and/or shrubs border a watercourse, lake, or pond.
14. Vegetation is comprised of large trees and shrubs that withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
15. Vegetation is comprised of a dense resilient herbaceous layer that stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
16. Other



WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.¹

CONSIDERATIONS/QUALIFIERS

1. Wetland is not degraded by human activity.
2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
3. Wetland is not fragmented by development.
4. Upland surrounding this wetland is undeveloped.
5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., brushland, woodland, active farmland, or idle land) at least 500 feet in width.
6. Wetland is contiguous with other wetland systems connected by a watercourse or lake.
7. Wildlife overland access to other wetlands is present.
8. Wildlife food sources are within this wetland or are nearby.
9. Wetland exhibits a high degree of interspersed vegetation classes and/or open water.
10. Two or more islands or inclusions of upland within the wetland are present.
11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland, are present.
13. Density of the wetland vegetation is high.
14. Wetland exhibits a high degree of plant species diversity.
15. Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)
16. Plant/animal indicator species are present. (List species for project)
17. Animal signs observed (tracks, scats, nesting areas, etc.)
18. Seasonal uses vary for wildlife and wetland appears to support varied population diversity/abundance during different seasons.
19. Wetland contains or has potential to contain a high population of insects.
20. Wetland contains or has potential to contain large amphibian populations.
21. Wetland has a high avian utilization or its potential.
22. Indications of less disturbance-tolerant species are present.
23. Signs of wildlife habitat enhancement are present (birdhouses, nesting boxes, food sources, etc.).
24. Other

¹In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list of potential wetland-dependent mammal, reptile, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process.

RECREATION (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.



CONSIDERATIONS/QUALIFIERS

1. Wetland is part of a recreation area, park, forest, or refuge.
2. Fishing is available within or from the wetland.
3. Hunting is permitted in the wetland.
4. Hiking occurs or has potential to occur within the wetland.
5. Wetland is a valuable wildlife habitat.
6. The watercourse, pond, or lake associated with the wetland is unpolluted.
7. High visual/aesthetic quality of this potential recreation site.
8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
10. Off-road public parking available at the potential recreation site.
11. Accessibility and travel ease is present at this site.
12. The wetland is within a short drive or safe walk from highly populated public and private areas.
13. Other

EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.



CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed and natural.
5. Wetland is considered to be a valuable wildlife habitat.
6. Wetland is located within a nature preserve or wildlife management area.
7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
9. Potential educational site is within safe walking distance or a short drive to schools.
10. Potential educational site is within safe walking distance to other plant communities.
11. Direct access to perennial stream at potential educational site is available.
12. Direct access to pond or lake at potential educational site is available.
13. No known safety hazards exist within the potential educational site.
14. Public access to the potential educational site is controlled.
15. Handicap accessibility is available.
16. Site is currently used for educational or scientific purposes.
17. Other



UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

CONSIDERATIONS/QUALIFIERS

1. Upland surrounding wetland is primarily urban.
2. Upland surrounding wetland is developing rapidly.
3. More than 3 acres of shallow permanent open water (less than 6.6 feet deep), including streams, occur in wetlands.
4. Three or more wetland classes are present.
5. Deep and/or shallow marsh or wooded swamp dominate.
6. High degree of interspersed vegetation and/or open water occur in this wetland.
7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
8. Potential educational site is within a short drive or a safe walk from schools.
9. Off-road parking at potential educational site is suitable for school buses.
10. No known safety hazards exist within this potential educational site.
11. Direct access to perennial stream or lake exists at potential educational site.
12. Two or more wetland classes are visible from primary viewing locations.
13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) are visible from primary viewing locations.
14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
15. Large area of wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
17. Overall view of the wetland is available from the surrounding upland.
18. Quality of the water associated with the wetland is high.
19. Opportunities for wildlife observations are available.
20. Historical buildings are found within the wetland.
21. Presence of pond or pond site and remains of a dam occur within the wetland.
22. Wetland is within 50 yards of the nearest perennial watercourse.
23. Visible stone or earthen foundations, berms, dams, standing structures, or associated features occur within the wetland.
24. Wetland contains critical habitat for a state- or federally-listed threatened or endangered species.
25. Wetland is known to be a study site for scientific research.
26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
27. Wetland has local significance because it serves several functional values.
28. Wetland has local significance because it has biological, geological, or other features that are locally rare or unique.
29. Wetland is known to contain an important archaeological site.
30. Wetland is hydrologically connected to a state or federally designated scenic river.
31. Wetland is located in an area experiencing a high wetland loss rate.
32. Other

VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.



CONSIDERATIONS/QUALIFIERS

1. Multiple wetland classes are visible from primary viewing locations.
2. Emergent marsh and/or open water are visible from primary viewing locations.
3. A diversity of vegetative species is visible from primary viewing locations.
4. Wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
6. Visible surrounding land use form contrasts with wetland.
7. Wetland views absent of trash, debris, and signs of disturbance.
8. Wetland is considered to be a valuable wildlife habitat.
9. Wetland is easily accessed.
10. Low noise level at primary viewing locations.
11. Unpleasant odors absent at primary viewing locations.
12. Relatively unobstructed sight line exists through wetland.
13. Other

ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.

ES

CONSIDERATIONS/QUALIFIERS

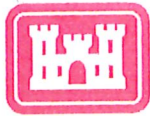
1. Wetland contains or is known to contain threatened or endangered species.
2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.

Section 2

USACE Permit Requirements

- 2.1 USACE Appendix B checklist
- 2.2 Section 3.2: Wildlife Habitat map
- 2.3 Section 5: RPR correspondence





**US Army Corps
of Engineers®**
New England District

Appendix B

New Hampshire General Permits (GPs) Required Information and Corps Secondary Impacts Checklist

In order for the Corps of Engineers to properly evaluate your application, applicants must submit the following information along with the New Hampshire DES Wetlands Bureau application or permit notification forms. Some projects may require more information. For a more comprehensive checklist, go to <https://www.nae.usace.army.mil/Missions/Regulatory/> "Useful Documents, Forms and Publications" and then "Corps Application Form and Guidance." Check with the Corps at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the State of New Hampshire DES Wetlands Bureau application and Permit by Notification forms.

All Projects:

- New Hampshire Department of Environmental Services (DES) Wetlands Permit Application.
- Request for Project Review Form by the New Hampshire Division of Historical Resources (DHR)
<https://www.nh.gov/nhdhr/review/rpr.htm>.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible plans no larger than 11"x17" with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show mean low water (MLW) and mean high water (MHW) elevations. Show the high tide line (HTL) elevations when fill is involved. In other waters, show ordinary high water (OHW) elevation.
- On each plan, show the following for the project:
 - Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. In coastal waters this may be mean higher high water (MHHW), mean high water (MHW), mean low water (MLW), mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983-2001.
 - Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
 - Project limits with existing and proposed conditions.
 - Limits of any Federal Navigation Project in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the Federal Navigation Project;
 - Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the OHW in inland waters and below the HTL in coastal waters.
 - Delineation of all waterways and wetlands on the project site,;
- Use Federal delineation methods and include Corps wetland delineation data sheets (GC 2).
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact the Corps for guidance.



**US Army Corps
of Engineers**
New England District

**New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

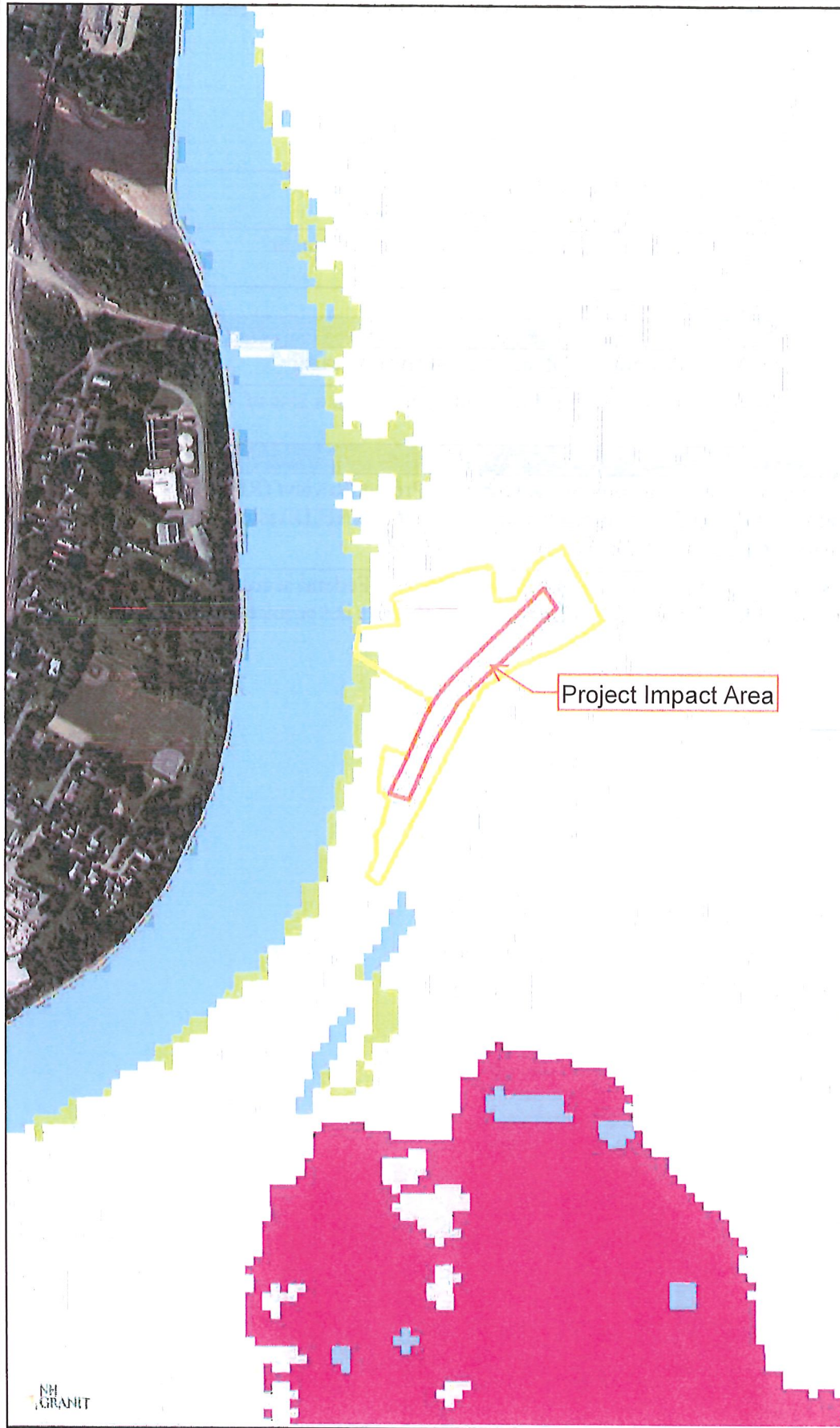
1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	x	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	x	
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/ . The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.		x
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?		n/a
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)	x	
2.5 The overall project site is more than 40 acres?		x
2.6 What is the area of the previously filled wetlands?	n/a	
2.7 What is the area of the proposed fill in wetlands?	2668 SF	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	n/a	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index	x	

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: • PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html . • Data Mapper: www.granit.unh.edu . • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html .		x
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		x
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		x
3.5 Are stream crossings designed in accordance with the GC 21?		n/a
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		x
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		n/a
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	x	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Highest Ranked Wildlife Habitat Map



Legend

- Prioritized Habitat Blocks
- State
- County
- City/Town
- Bridges
- Turnpikes
- Interstates
- US Routes
- State Routes
- Local Roads
- National Wetlands Inventory Version 2
 - Estuarine and Marine Deepwater
 - Estuarine and Marine Wetland
 - Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Lake
 - Other
 - Riverine
- WAP 2020: Highest Ranked Wildlife Habitat
 - 1 Highest Ranked Habitat in NH
 - 2 Highest Ranked Habitat in Region
 - 3 Supporting Landscape
- WAP 2020: Wildlife Habitat I Cover
 - Alpine
 - Appalachian oak-pine
 - Cliff and Talus slope
 - Coastal island and Rocky coast
 - Developed Impervious
 - Developed or Barren land
 - Dune
 - Floodplain forest
 - Grassland
 - Hemlock-hardwood-pine
 - High-elevation spruce-fir
 - Lowland spruce-fir
 - Northern hardwood-conifer
 - Northern swamp
 - Open water
 - Peatland

Map Scale

1: 6,494



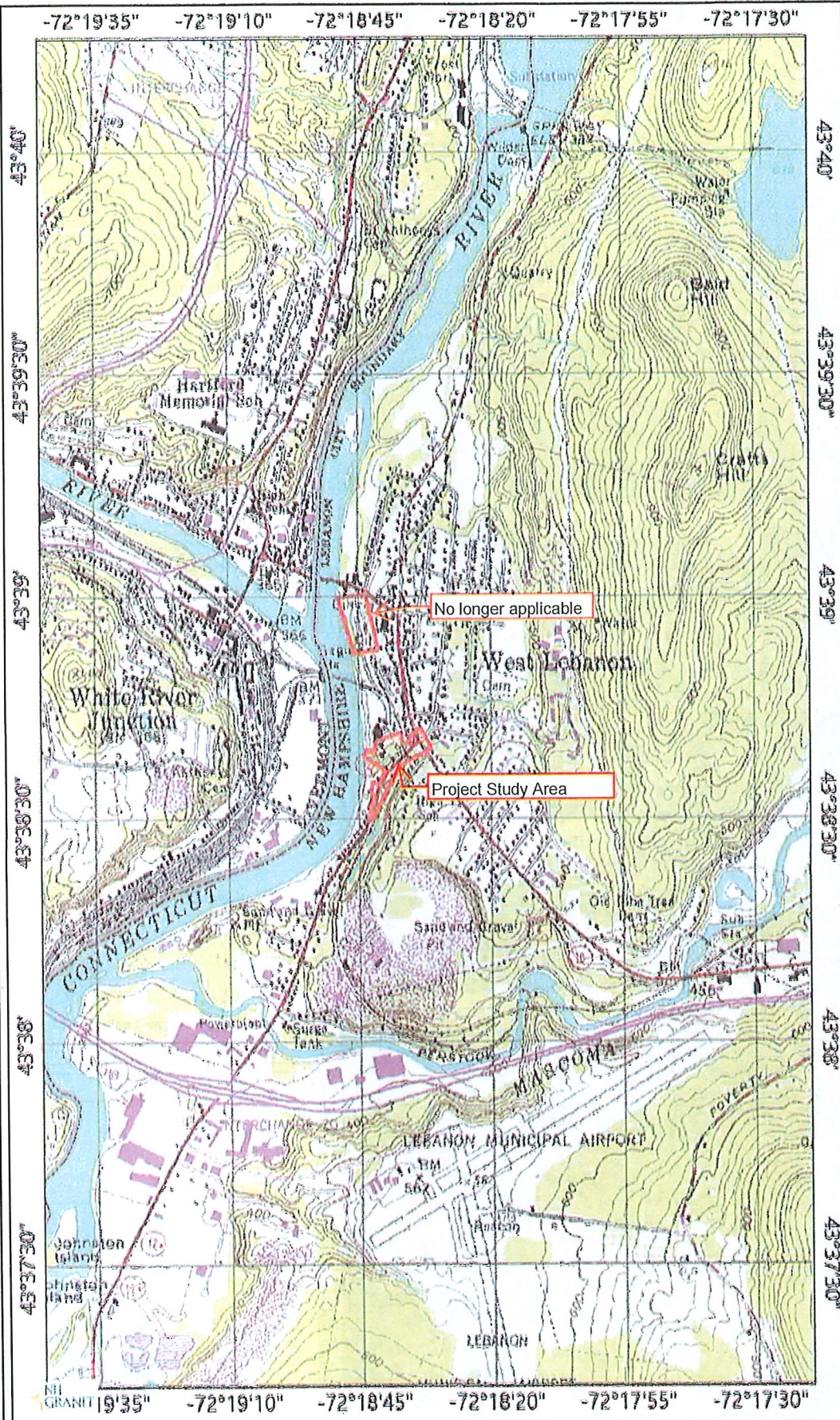
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Map Generated: 12/19/2024

Notes



NHDOT PROJECT NO. 13558A Locus Map



Legend

- State
- County
- City/Town

Map Scale

1: 24,000

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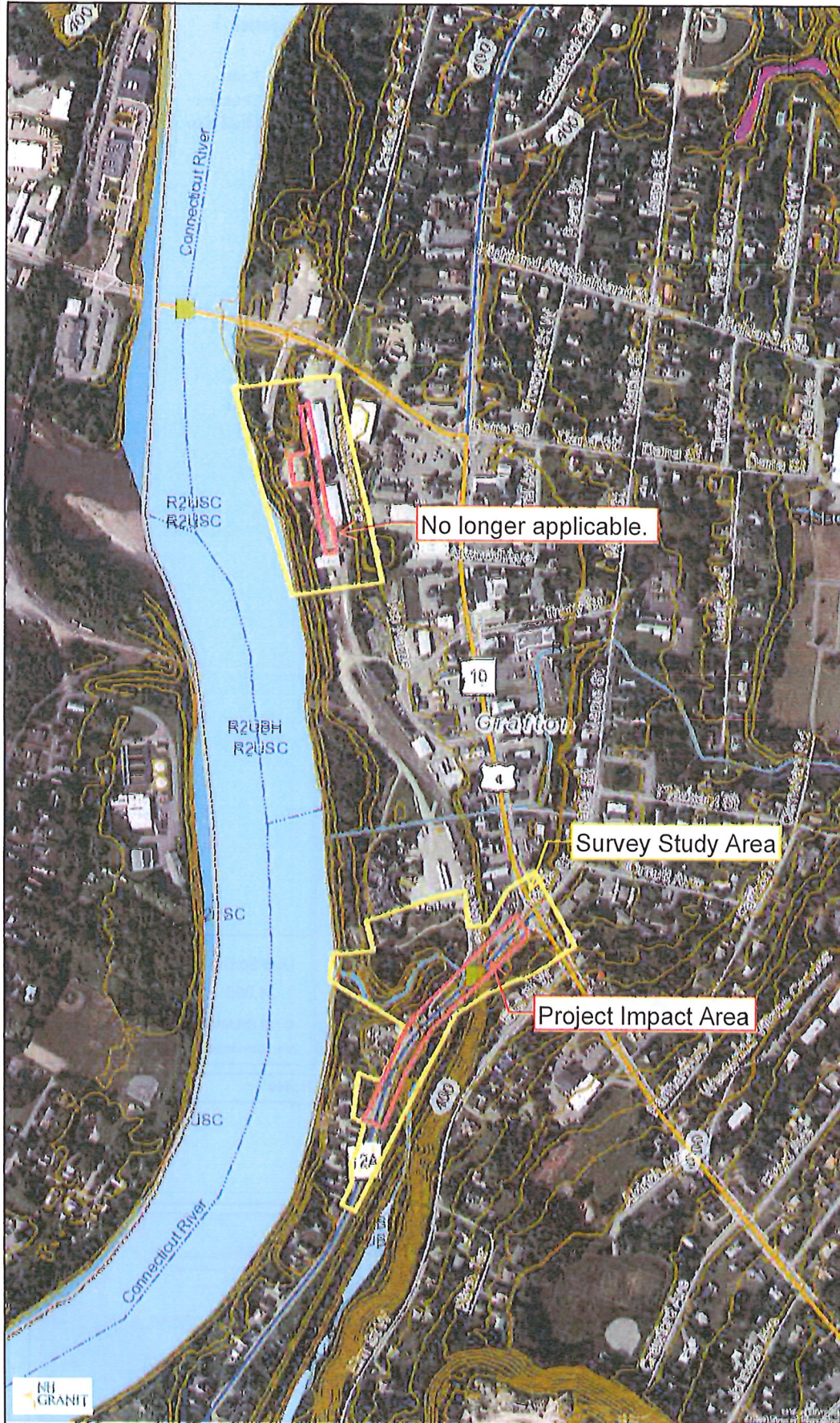
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Notes



Full Project Area of Impact



Legend

Contour_2ft_0108010601_s
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State

County

City/Town

Bridges

Turnpikes

Interstates

US Routes

State Routes

Local Roads

Hydric Soils

Stream Centerlines

Perennial Stream

Intermittent Stream

Artificial Paths

Water Bodies

Lake/Pond

Reservoir

Estuary

Swamp/Marsh

Other Water Features

River

Spillway

Inundation Area

Dam/Weir

Canal/Ditch

Rapids

National Wetlands Inventory

Version 2

Map Scale

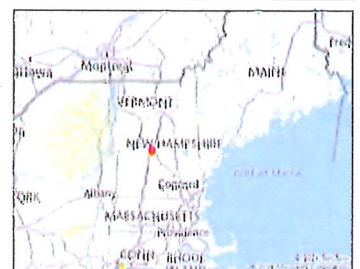
1: 6,494

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Map Generated: 9/10/2024



Notes



Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Date Reviewed: 7/10/2022
(Desktop or Field Review Date)

Project Name: NH 12A Bridge Replacement

State Number: #13558A, NH 12A over NHRR: **FHWA Number:** X-A000(235)
Alternative 2E

Environmental Contact: Jill Edelmann **DOT**
Email Address: Jillian.L.Edelmann@dot.nh.gov **Project Manager:** Kevin Russel

Project Description: The City of Lebanon, through the New Hampshire Department of Transportation's (NHDOT's) Local Public Agency (Municipal Bridge Aid Program) for municipally managed projects, proposes replacement of the bridge (Br. No. 062/117) carrying NH 12A over the state-owned, abandoned Boston & Maine Railroad/Northern Railroad (ZMT-NRR2), the widening of the bridge/roadway, the addition of a turning lane on NH 12A, and the construction of a new local access drive connecting NH 12A to the former Westboro railyard. This project is federally funded through the Surface Transportation Program.

Please select the applicable activity/activities:

Highway and Roadway Improvements	
☒	1. Modernization and general highway maintenance <u>that may require additional highway right-of-way or easement</u> , including: a. sidewalk reconstruction h. removal of trees, as part of roadway improvements
☐	2. Installation of rumble strips or rumble stripes
☒	3. Installation or replacement of pole-mounted signs
☒	4. Guardrail replacement, provided any extension does not connect to a bridge older than 50 years old (unless it does already), and there is no change in access associated with the extension
Bridge and Culvert Improvements	
☐	5. Culvert replacement (excluding stone box culverts), when the culvert is less than 60" in diameter and excavation for replacement is limited to previously disturbed areas
☐	6. Bridge deck preservation and replacement, as long as no character defining features are impacted
☒	7. Non-historic bridge and culvert maintenance, renovation, or total replacement, <u>that may require minor additional right-of-way or easement</u> , including: a. replacement or maintenance of non-historic bridges
☐	8. Historic bridge maintenance activities within the limits of existing right-of-way, including: Choose an item. Choose an item.
☒	9. Stream and/or slope stabilization and restoration activities (including removal of debris or sediment obstructing the natural waterway, or any non-invasive action to restore natural conditions)
Bicycle and Pedestrian Improvements	
☒	10. Construction of pedestrian walkways, sidewalks, sidewalk tip-downs, small passenger shelters, and alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons
☐	11. Installation of bicycle racks
☐	12. Recreational trail construction
☐	13. Recreational trail maintenance when done on existing alignment

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

☒	14. Construction of bicycle lanes and shared use paths and facilities within the existing right-of-way
Railroad Improvements	
☐	15. Modernization, maintenance, and safety improvements of railroad facilities within the existing railroad or highway right-of-way, <u>provided no historic railroad features are impacted</u> , including, but not limited to: Choose an item. Choose an item.
☐	16. In-kind replacement of modern railroad features (i.e. those features that are less than 50 years old)
☐	17. Modernization/modification of railroad/roadway crossings provided that all work is undertaken within the limits of the roadway structure (edge of roadway fill to edge of roadway fill) and no associated character defining features are impacted
Other Improvements	
☐	18. Installation of Intelligent Transportation Systems
☐	19. Acquisition or renewal of scenic, conservation, habitat, or other land preservation easements where no construction will occur
☒	20. Rehabilitation or replacement of existing storm drains.
☐	21. Maintenance of stormwater treatment features and related infrastructure

Please describe how this project is applicable under Appendix B of the Programmatic Agreement.

The Project includes replacement of the non-historic bridge that carries NH 12A (South Main Street) over the Northern Railroad Historic District (ZMT-NRR2). The bridge is an I-Beam (stringer) type facility with a concrete deck constructed in 1949. This bridge is on the NHDOT List of Deficient Bridges (Red List). It was determined this bridge is not individually eligible. The bridge is a not contributing feature to the Northern Railroad Historic District, eligible for listing on the National Register of Historic Places. The bridge is also not located within the former Westboro Rail Yard, which was determined not individually eligible, however contributes to the Northern Railroad Historic District. Based on a review by the NHDHR on February 24, 2021, there are no archaeological concerns in the work zone.

In addition to the bridge replacement, the proposed Project involves creating an access road within the former Westboro Rail Yard District, however the access road is on an existing roadway alignment and will not impact any railroad features within the Northern Railroad Historic District. The construction of the access road necessitates the demolition of one structure within the APE, 18 South Main Street. Additionally, 11 South Main Street (LEB-0009) will be demolished due to the South Main Street roadway shift. These structures were previously determined to be not eligible for listing on the National Register. Prior to the initiation of this project, a building at 5 South Main Street located within the APE was demolished in 2010, according to the City Engineer of Lebanon.

Construction activities within the boundary of the Northern Railroad Historic District, which is defined as the railroad right-of-way, includes drilling test borings, installation of drainage systems, utility lines, and bridge support structures. The right-of-way is wide at the location of the bridge, and none of these activities are planned for the areas of ballast, ties, and tracks of the railroad. Construction involves temporary construction easements and slope easements within the boundary of ZMT-NRR2. The slope will be stabilized with stone fill class C. An existing gravel access road will be paved and supported by Mechanically Stabilized Earth retaining wall to protect against the stormwater channel. The access road will be improved to support both vehicular and pedestrian access with a sidewalk. Improvements to the existing access road involve temporary and/or minor use of areas within the boundary of ZMT-NRR2. As for the existing bridge, it will be removed, and new reinforced concrete piers will be constructed at the location of existing piers. The new bridge will feature four-foot-wide paved shoulders that may also serve as a bike lane. Access road improvement work will not impact any remaining features of the Westboro Rail Yard. Construction impacts are temporary and minimal and will not diminish or compromise any character defining features of ZMT-NRR2.

Please submit this Certification Form along with the Transportation RPR, including photographs, USGS maps, design plans and as-built plans, if available, for review. Note: The RPR can be waived for in-house projects, please consult Cultural Resources Program Staff.

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Coordination Efforts:

Has an RPR been submitted to NHDOT for this project?	Yes	NHDHR R&C # assigned?	2732
Please identify public outreach effort contacts; method of outreach and date:	In a letter dated December 6, 2021, comments were requested from the Lebanon Heritage Commission. A letter was received by the Lebanon Heritage Commission on December 17, 2021. No objections to the project were made by commission members. In January 2022, two commission members provided comments that expressed support for the revitalization of the Westboro Rail Yard and any recommendations made by the West Lebanon Revitalization Advisory Committee to that end. They noted that the South Main Street area was not determined to be a historic district. One commissioner stated that demolition of buildings will not have an effect on historical resources because this area has experienced demolitions and alterations of buildings recently.		

Finding: (To be filled out by NHDOT Cultural Resources Staff)

☐	No Potential to Cause Effects	☒	No Historic Properties Affected
This finding serves as the Section 106 Memorandum of Effect. No further coordination is necessary.			
☐	This project does <i>not</i> comply with Appendix B. Review will continue under Stipulation VII of the Programmatic Agreement. Please contact NHDOT Cultural Resources Staff to determine next steps.		
NHDOT comments: Jill Edelmann Digitally signed by Jill Edelmann Date: 2022.07.19 09:45:21-04'00' NHDOT Cultural Resources Staff Date			

Coordination of the Section 106 process should begin as early as possible in the planning phase of the project (undertaking) so as not to cause a delay.

Project sponsors should not predetermine a Section 106 finding under the assumption a project is limited to the activities listed in Appendix B until this form is signed by the NHDOT Bureau of Environment Cultural Resources Program staff.

Every project shall be coordinated with, and reviewed by, the NHDOT-BOE Cultural Resources Program in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the New Hampshire State Historic Preservation Office, the Army Corps of Engineers, New England District, the Advisory Council on Historic Preservation, and the New Hampshire Department of Transportation Regarding the Federal Aid Highway Program in New Hampshire*. In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

If any portion of the project is not entirely limited to any one or a combination of the activities specified in Appendix B (with, or without the inclusion of any activities listed in Appendix A), please continue discussions with NHDOT Cultural Resources staff.

This No Potential to Cause Effect or No Historic Properties Affected project determination is your Section 106 finding, as defined in the Programmatic Agreement.

Should project plans change, please inform the NHDOT Cultural Resources staff in accordance with Stipulation VII of the Programmatic Agreement.

Section 106 Programmatic Agreement - Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

PROJECT UPDATE

March 29, 2024

Lebanon 13558A, X-A000(235), RPR 2732

As the design has progressed, it was brought to the attention of NHDOT Cultural resources that a potential rail related resource was not identified in the previous Appendix B Certification. The Project proposes to remove and reset a guy pole associated with tell tales located north of the subject bridge (062/117). The guy pole consists of a vertical piece of steel that has been secured into the ground and a cable attached at the top of the steel, traversing to an extant tell tale. It has been confirmed that the tell tales will remain in place and will not be impacted as part of the project. Removing and resetting the guy pole will have little to no impact on the tell tales. There is a potential for the design to shift slightly, avoiding the guy pole completely.

By signing below, NHDOT Cultural Resources has confirmed that the previous Appendix B Certification, noting No Historic Properties would be affected, signed July 7, 2022 continues to qualify with this project update, either removing and resetting the guy pole, or avoiding it completely. No additional documentation is needed. This project update shall be appended to the Appendix B Certification for Lebanon 13558A.

Jill Edelmann

Digitally signed by Jill Edelmann
Date: 2024.03.29
10:17:26-04'00'



View looking north from the Route 12A Bridge (062/117)



Detailed view of the steel guy pole to be removed.

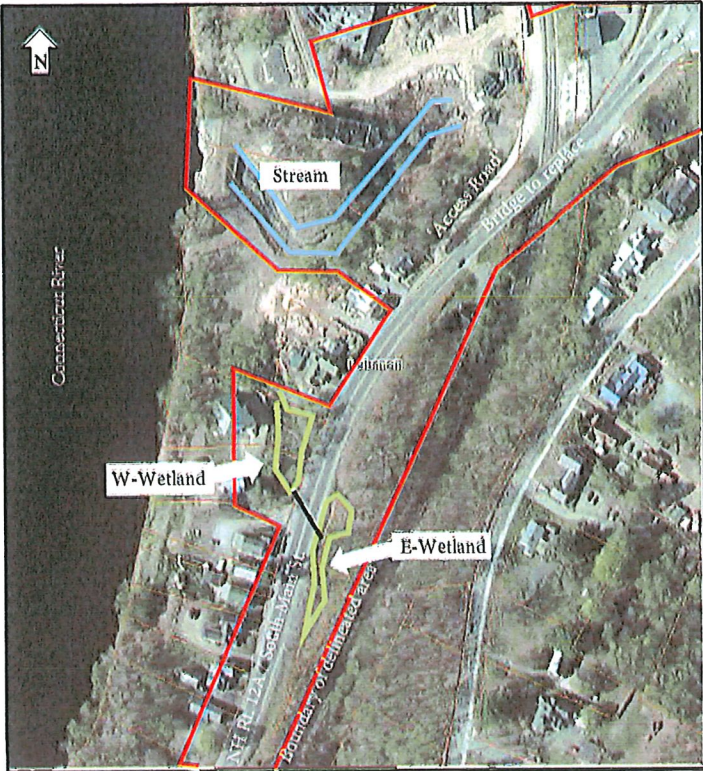
Section 3

Project Area Resources: Overview

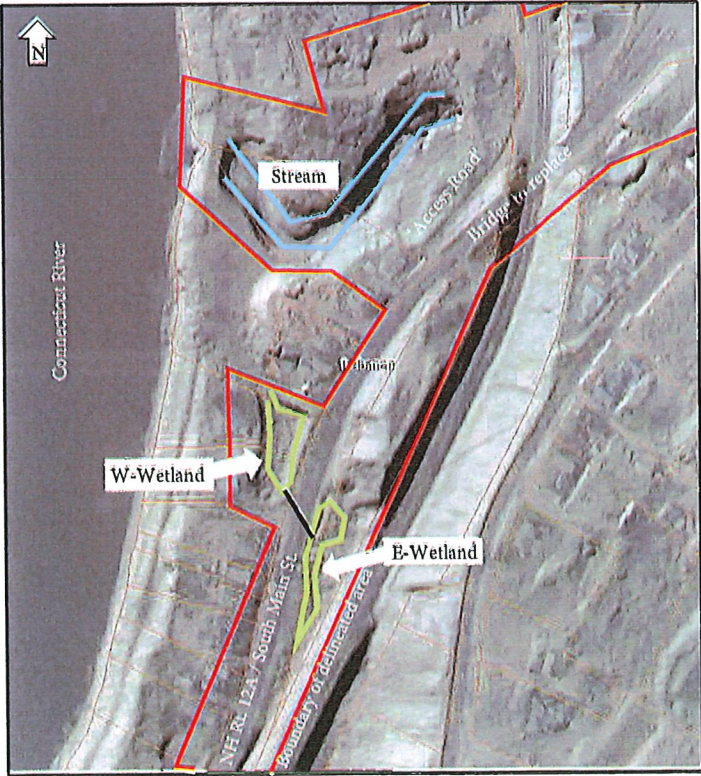
- 3.1 Jurisdictional Resources Respective to Surrounding Landscape map
- 3.2 NHDES WPPT map
- 3.3 USGS map
- 3.4 StreamStats report



Jurisdictional Resources Respective to Surrounding Landscape



NH GRANIT Statewide aerial imagery (2015)



NH GRANIT Statewide LIDAR-Derived Bare Earth NE Hillshade (2022)

NH Rt. 12A Bridge Replacement & Road Realignment West Lebanon, NH

Legend

NH Parcels

Additional Lines

City/Town

Designated Rivers with a

Ammonoosuc

Ashuelot

Cocheco

Cold

Connecticut

Contoosick

Exeter

Isinglass

Lamprey

Little

Miscouma

Merrimack-Lower

Merrimack-Upper

Middle Branch Piscataquog

North

North Branch Contoosick

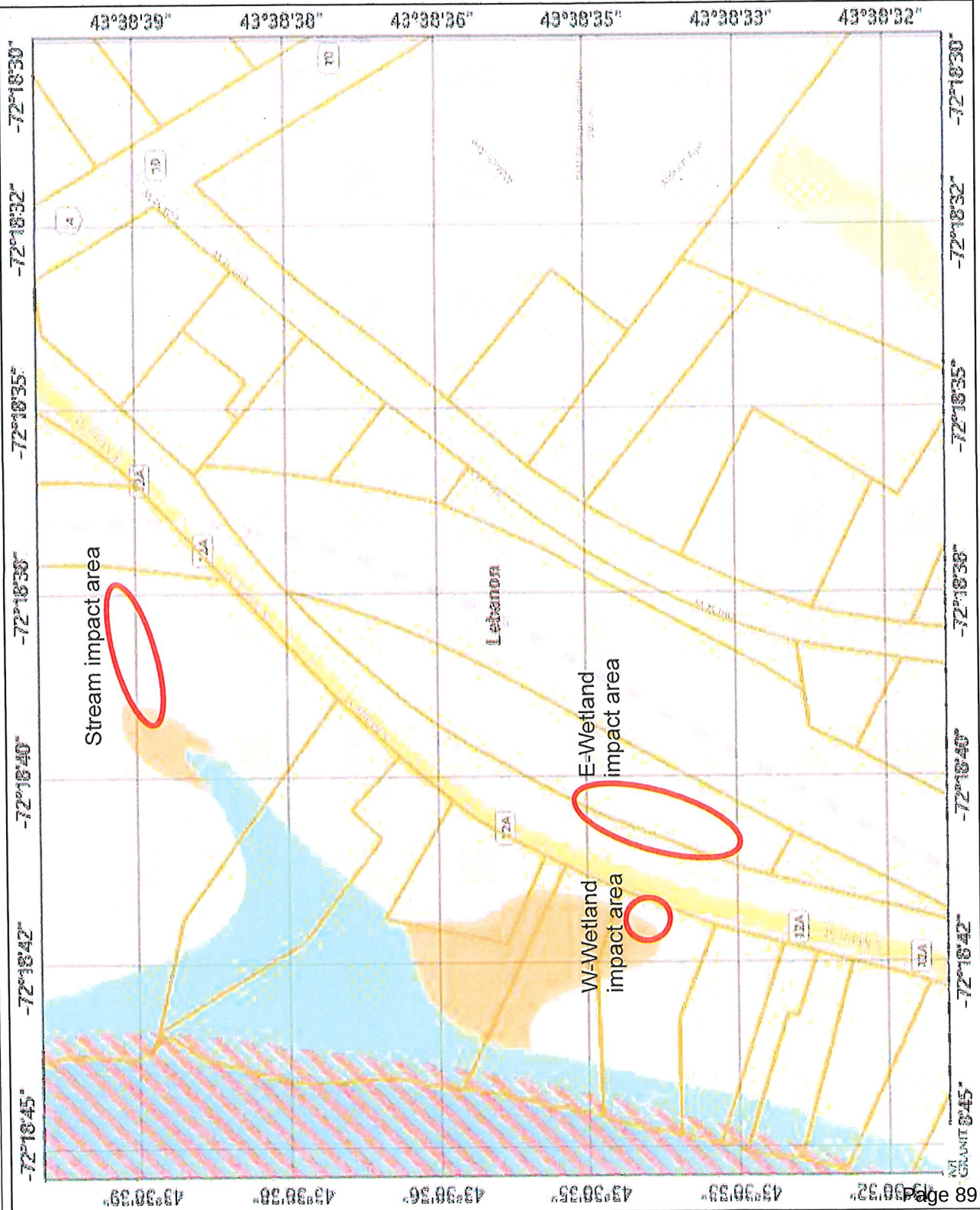
North Branch Lamprey

Map Scale
1: 1,624

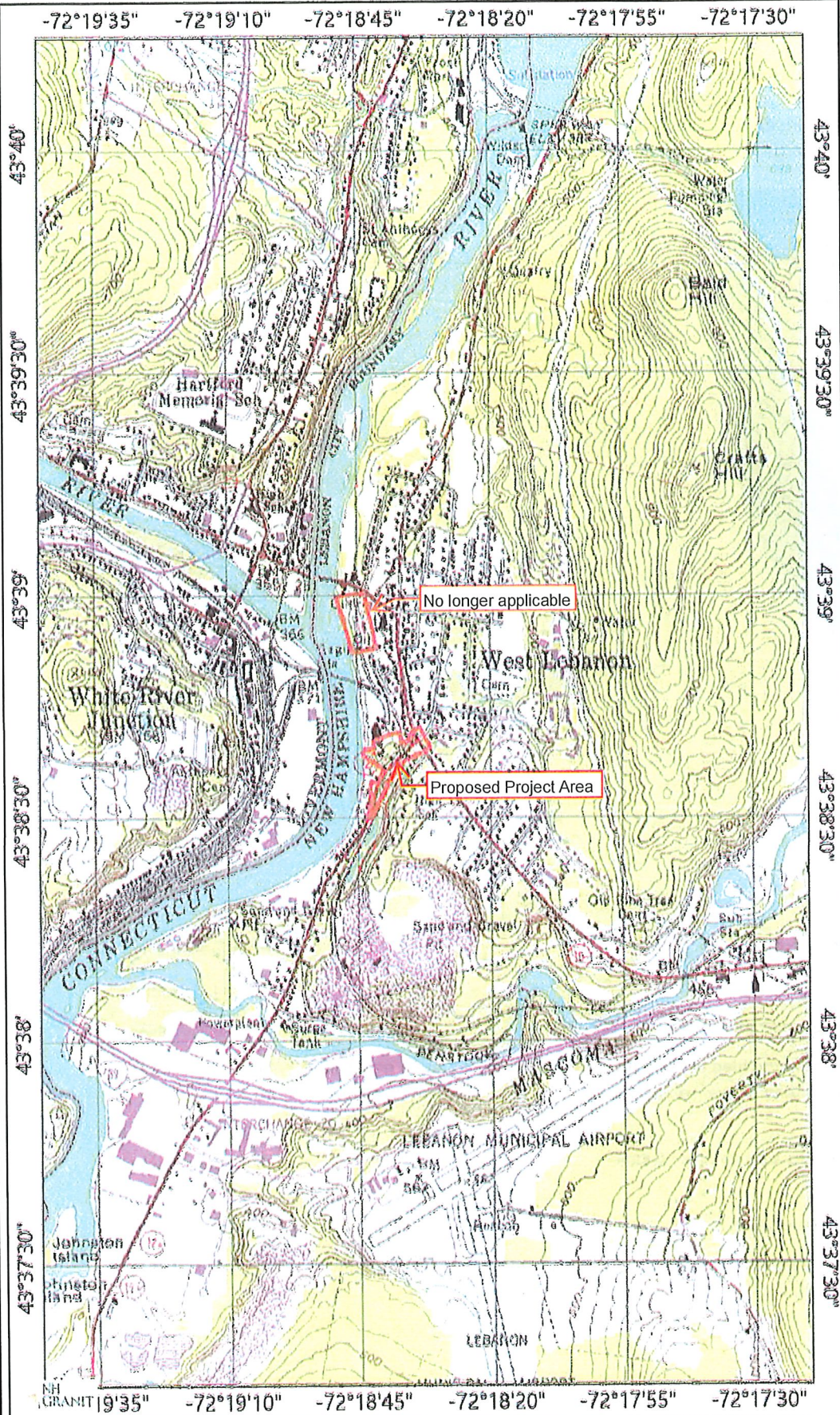
© NH GRANIT, www.granit.unh.edu
Map Generated: 12/23/2024

Notes

- New Abutment, Pier, and Bridge
- Prime Wetlands
- Prime Wetlands with 100 ft Buffer
- Roadbeds
- FERPA Placemarks
- 100 ft Annual Chance Flood Hazard
- Roadway
- 0.2 mi Annual Chance Flood Hazard
- Area of Undeveloped Road Right-of-Way
- Area Protected by Levee
- Priority Resource Area
- Flow Path, Water Adjacent to Tier 2 Streams
- Wetland Study / Stream Wetlands



NHDOT PROJECT NO. 13558A Locus Map



Legend

- State
- County
- City/Town

Map Scale

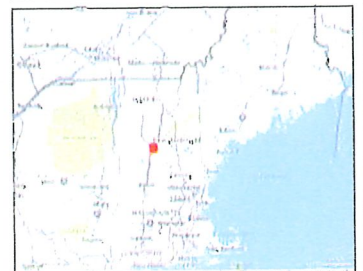
1: 24,000

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Map Generated: 7/30/2024



Notes



StreamStats Report

Region ID: NH

Workspace ID: NH20241223153820961000

Clicked Point (Latitude, Longitude): 43.64389, -72.31117

NHD Stream GNIS Name of Click Point: Stream name not found

HUC 8 of Clicked Point: 01080106 (Black River-Connecticut River)

Time: 2024-12-23 10:38:42 -0500



 Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
APRAVPRE	Mean April Precipitation	2.843	inches
BSLDEM30M	Mean basin slope computed from 30 m DEM	8.181	percent
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	413	feet per mi
DRNAREA	Area that drains to a point on a stream	0.06	square miles
ELEVMAX	Maximum basin elevation	559.72	feet
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	50.3	percent

» NHD Features of Delineated Basin

NHD Streams Intersecting Basin Delineation Boundary

This functionality attempts to find the stream name at the delineation point. The name of the nearest intersecting National Hydrography Dataset (NHD) stream is selected by default to appear in the report above. NHD streams do not correspond to the StreamStats stream grid and may not be accurate. If you would like a different stream to appear in the above section, please make a selection below.

No NHD streams intersect the delineated basin.

Watershed Boundary Dataset (WBD) HUC 8 Intersecting Basin Delineation Boundary

This functionality attempts to find the intersecting HUC 8 of the delineated watershed. HUC boundaries do not correspond to the StreamStats data and may not be accurate.

HUC 8	Name
01080106	Black River-Connecticut River

NHD Hydrologic Features Citations

**U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>.
(<https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>) U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>.
(<https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>)**

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.25.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Section 4

Project Plans



CONSTRUCTION PLANS

STATE AID BRIDGE PROJECT

FHWA PROJECT NO. X-A000(235)

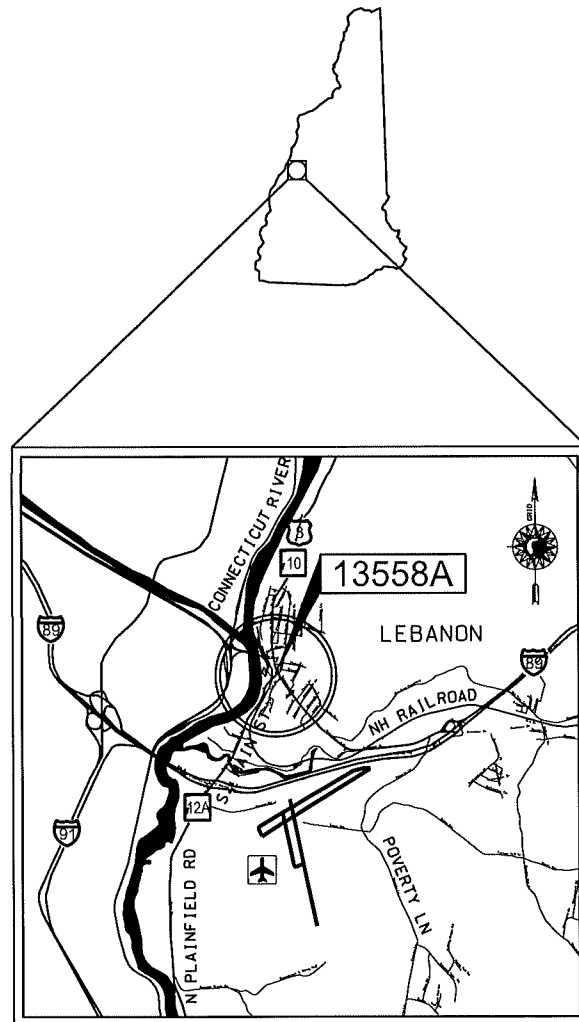
NHDOT PROJECT NO. 13558A

NH ROUTE 12A BRIDGE REPLACEMENT OVER NORTHERN NH RAILROAD

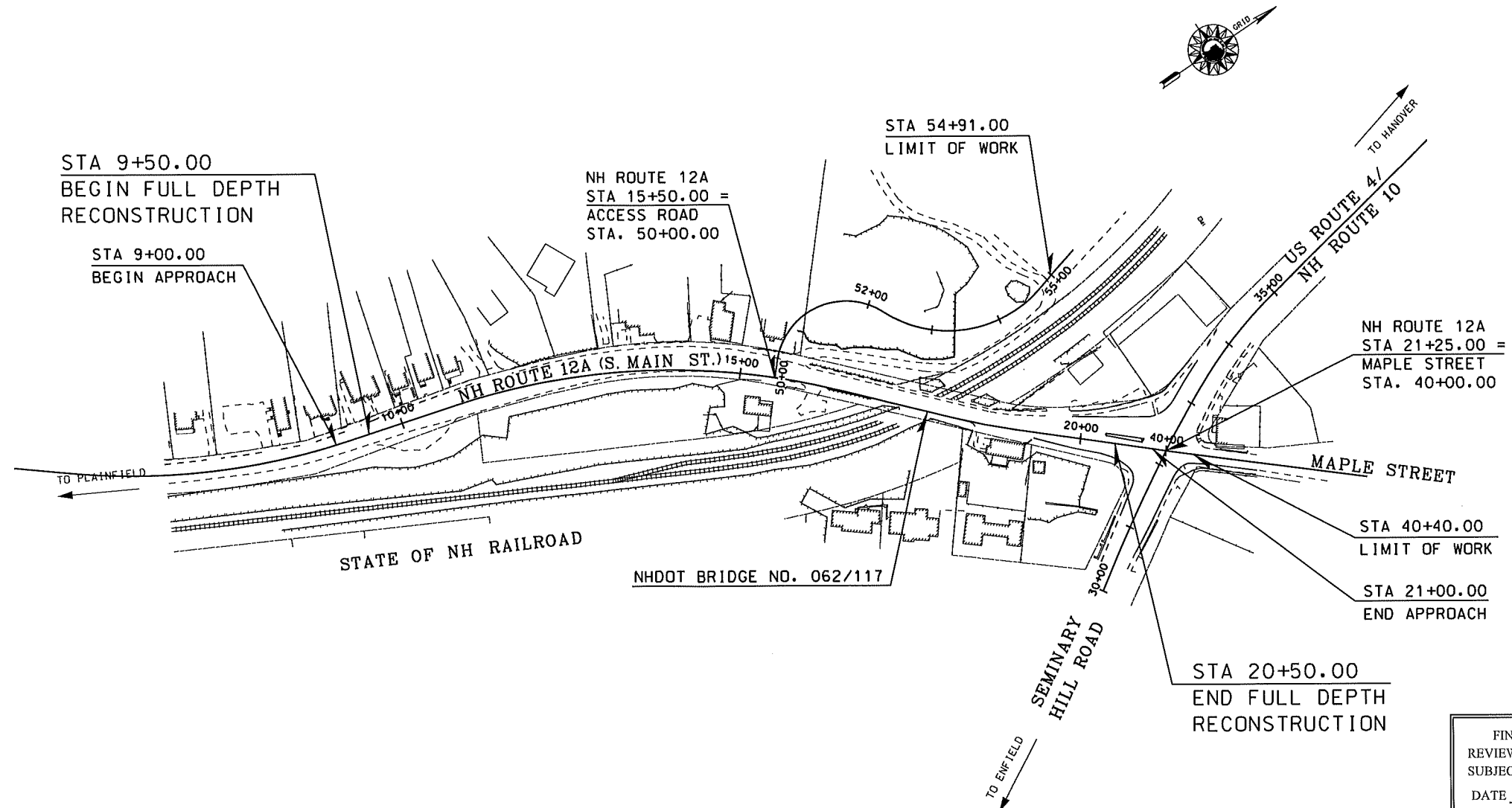
12/17/2024

DESIGN DATA

AVERAGE DAILY TRAFFIC 20 <u>19</u>	9,440
AVERAGE DAILY TRAFFIC 20 <u>39</u>	10,380
PERCENT OF TRUCKS	8%
DESIGN SPEED	30 MPH
LENGTH OF PROJECT	1100 FT



LOCATION MAP



FINAL PLANS
REVIEW SUBMISSION
SUBJECT TO CHANGE
DATE 12/17/2024

DuBois & King Inc.

10 CORPORATE DRIVE, SUITE 210
BEDFORD, NH 03110
TEL: (603) 637-1043
FAX: (603) 783-7101
www.dubois-king.com
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D&K PROJECT NO. 624124F6

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2	INDEX OF SHEETS AND GENERAL NOTES
3-4	STANDARD SYMBOLS (1&2)
5-6	TYPICAL SECTIONS OF IMPROVEMENT (1&2)
7-8	PROJECT NOTES (1&2)
9-10	SUMMARY OF QUANTITIES (1&2)
11	PAVEMENT DETAILS
12	ROAD DETAILS
13	ACCESS ROAD TRUCK APRON DETAIL
14	DAYSRING PREGNANCY CARE CENTER DETAIL
15	CURB ALIGNMENT SHEET
16	CURB SUMMARIES SHEET
17-25	SIDEWALK CURB RAMP DETAILS 1-9
26	DRIVEWAY DETAILS
27	TL-2 TAPERED EAGRT PLATFORM DETAILS FOR GUARDRAIL 2.50' FROM EP
28	TL-2-25' EAGRT PLATFORM DETAILS
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111-114	EROSION CONTROL DETAILS 1-2
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	<u>BRIDGE PLANS</u>
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124	BORING LOCATION PLAN
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161	STRIP SEAL EXPANSION JOINT
162	T3 STEEL BRIDGE RAIL
163	T3 BRIDGE APPROACH RAIL (STEEL POSTS)
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166-167	PROTECTIVE SCREEN WITH STEEL BRIDGE RAIL 1&2

GENERAL NOTES

- 1
- FOR STANDARD PLANS, SEE DEPARTMENT OF TRANSPORTATION WEBSITE AT: WWW.NH.GOV/DOT/ORG/PROJECTDEVELOPMENT/HIGHWAYDESIGN/STANDARDPLANS/INDEX.HTM.
- 2
- HIGH TENSION OVERHEAD TRANSMISSION LINES ARE LOCATED THROUGHOUT THE PROJECT WITH CROSSINGS AT VARIOUS LOCATIONS AND RUNNING ALONG THE ROAD THROUGHOUT THE PROJECT EVEN ON REGULAR POLES. THE CONTRACTOR IS ADVISED THAT EXTREME CAUTION WILL BE REQUIRED IN THE OPERATION OF EQUIPMENT, ESPECIALLY CRANES AND PILE DRIVING EQUIPMENT.
- 3
- MODIFY SUPERELEVATION ON EXISTING CURVES BY THE USE OF A LEVELING COURSE TO THE RATES INDICATED ON THE PLANS OR AS ORDERED.
- 4
- EXISTING DELINEATORS AND WITNESS MARKERS THAT ARE REMOVED AND DETERMINED BY THE ENGINEER TO BE IN ACCEPTABLE CONDITION SHALL BE RESET (SUBSIDIARY). ADDITIONAL DELINEATORS AND WITNESS MARKERS ORDERED WILL BE PAID UNDER THE APPROPRIATE ITEMS OF THE CONTRACT.
- 5
- NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
- 6
- PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.
- 7
- REMOVE UNPROTECTED PROJECT MARKERS (SUBSIDIARY).
- 8
- SURVEY DATA FOR THIS PROJECT WAS COLLECTED BY SDR AND THE FIELD NOTES CAN BE FOUND IN THE FIELD BOOK(S) -----, COORDINATES ARE NEW HAMPSHIRE STATE PLANE COORDINATES OF NAD83, ---- ADJUSTMENT AND THE BEARINGS ARE GRID, ELEVATIONS ARE REFERENCED TO ---- ----.
- 9
- QUANTITIES FOR EMBANKMENT AND EXCAVATION FOR SLOPE ROUNDINGS AS SHOWN ON THE TYPICALS HAVE NOT BEEN CALCULATED AND ARE NOT INCLUDED IN THE QUANTITY SUMMARIES, AND ARE CONSIDERED SUBSIDIARY TO THE APPROPRIATE 203 ITEMS.

THE FOLLOWING GENERAL NOTES WILL BE USED ON THIS PROJECT:											
1	2		4	5	6	7					

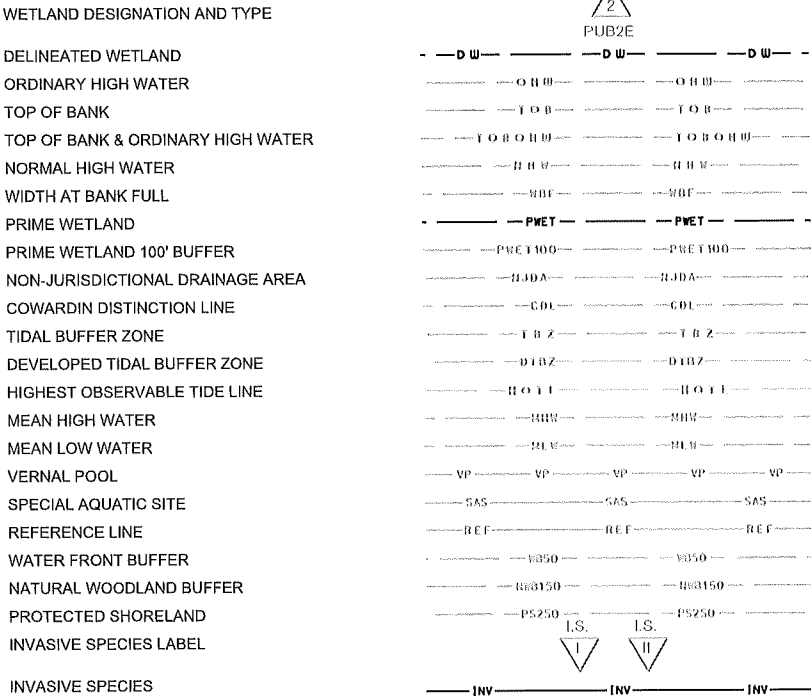
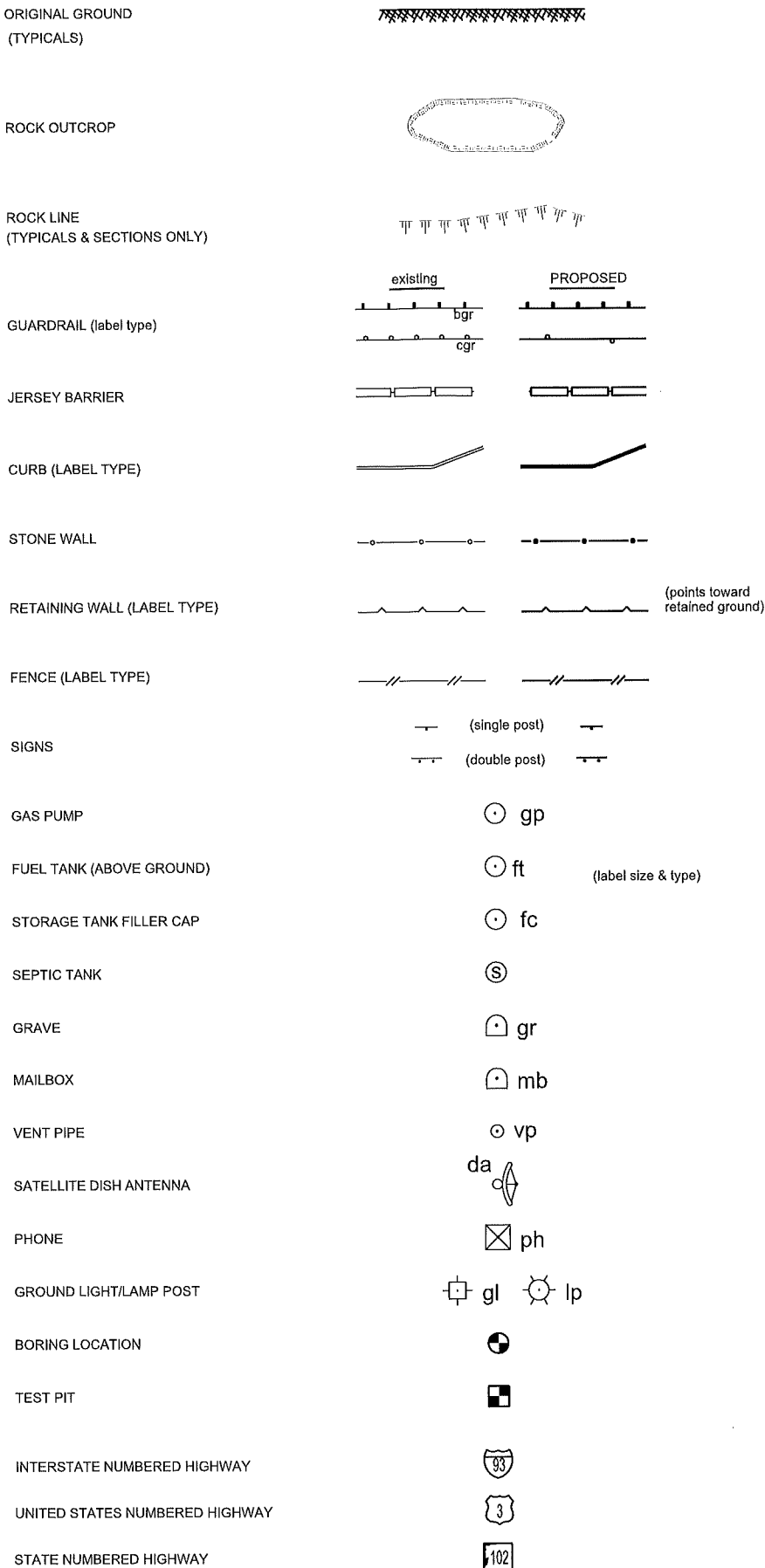
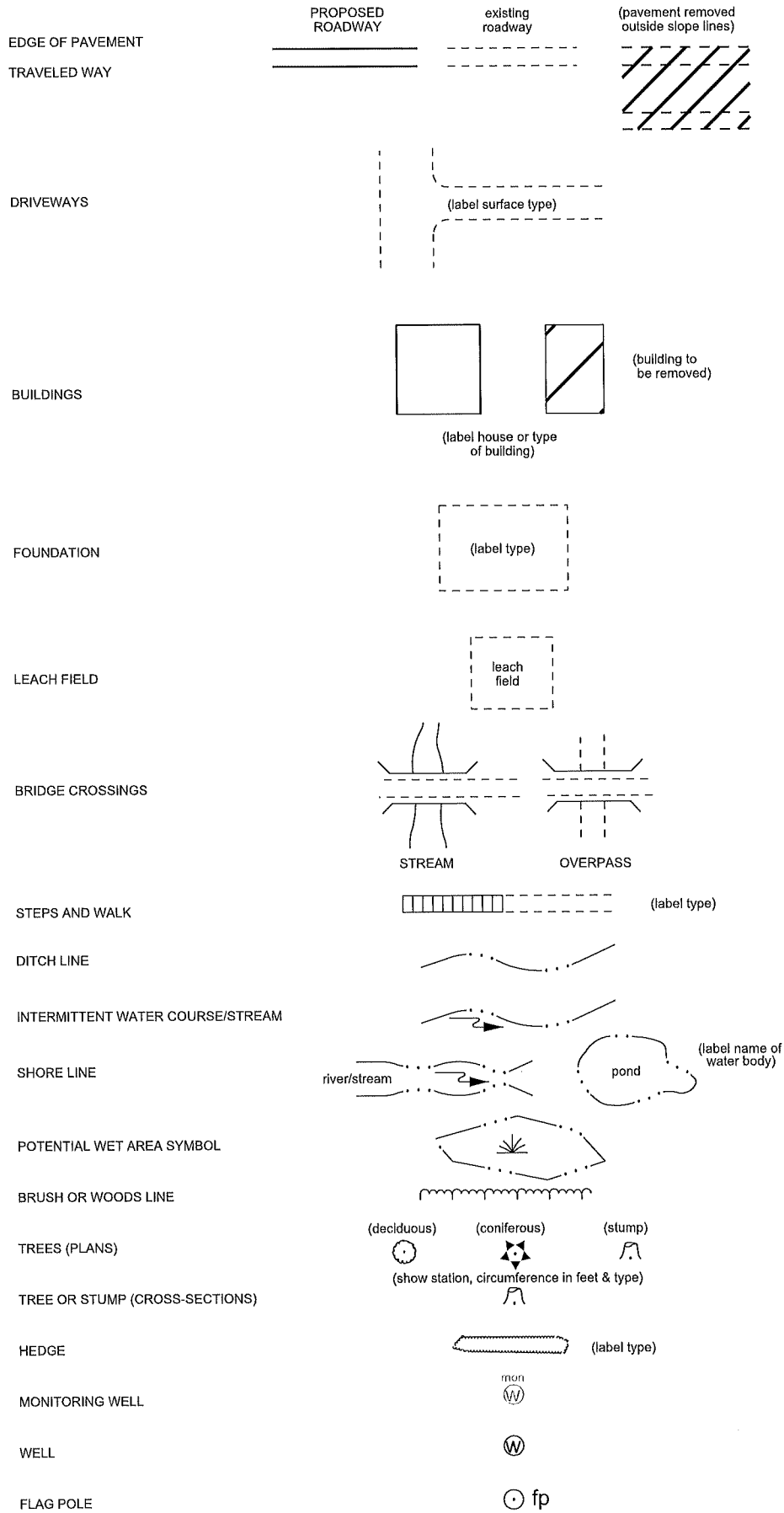
CITY OF LEBANON, NEW HAMPSHIRE			
INDEX OF SHEETS AND GENERAL NOTES			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
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REVISION DATE
02-25-2022

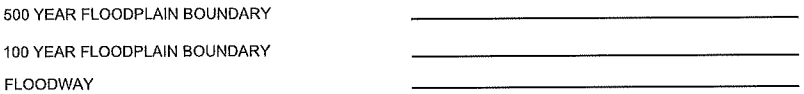


GENERAL

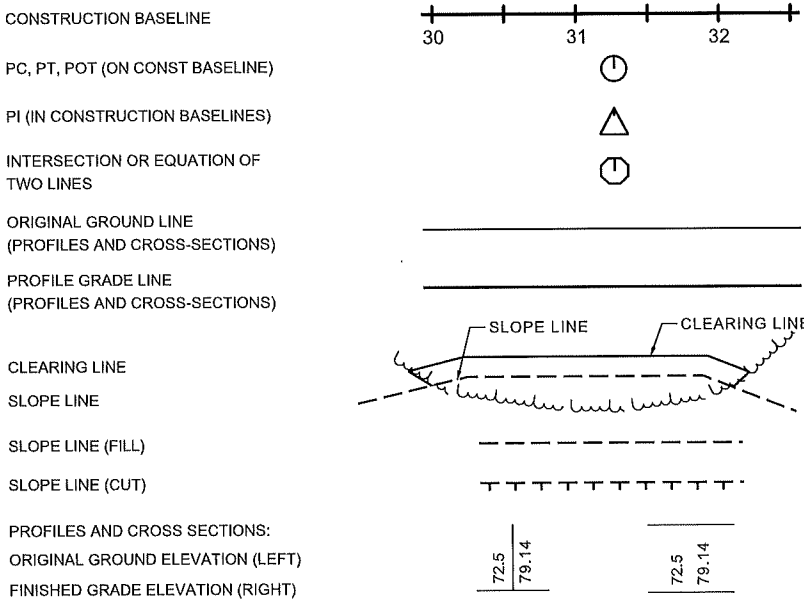
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY

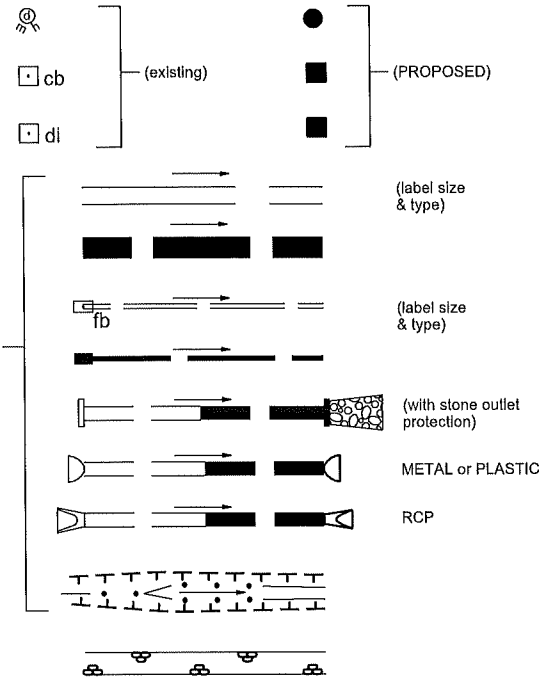


ENGINEERING

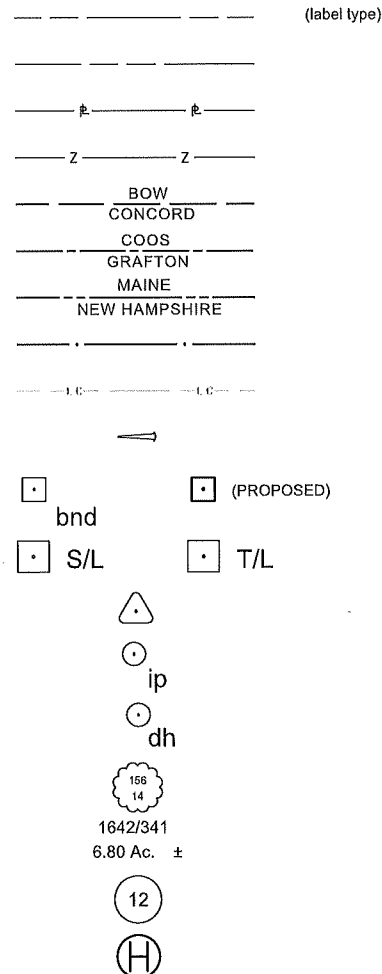


CITY OF LEBANON, NEW HAMPSHIRE				
STANDARD SYMBOLS (1 OF 2)				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
7-21-23	stdsyml_2	13558A	3	167

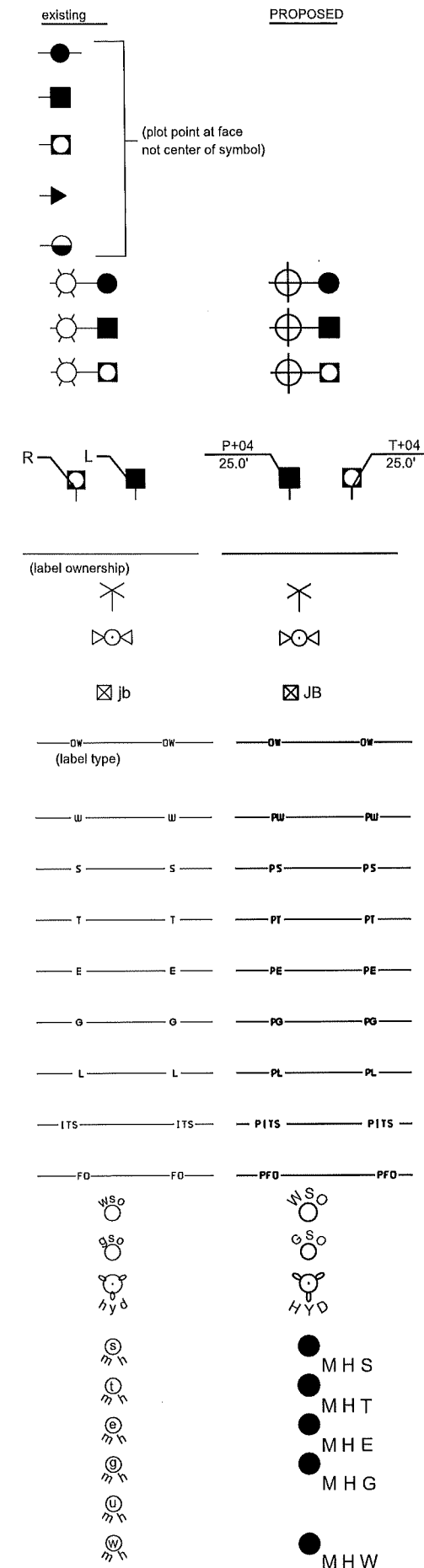
EROSION CONTROL/ STONE
SLOPE PROTECTION



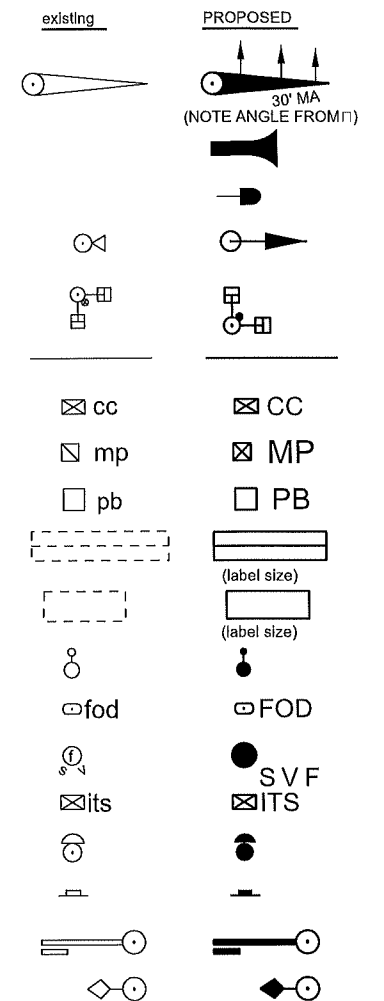
HISTORIC PROPERTY



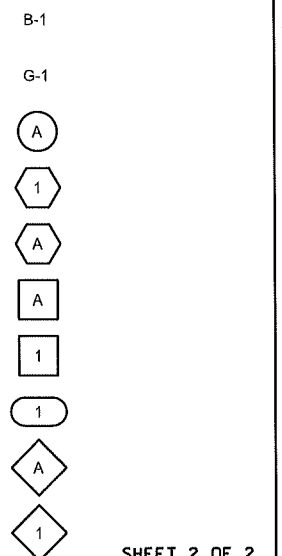
WATER



ROAD AND WEATHER INFO SYSTEM



TRAFFIC SIGNAL NOTE



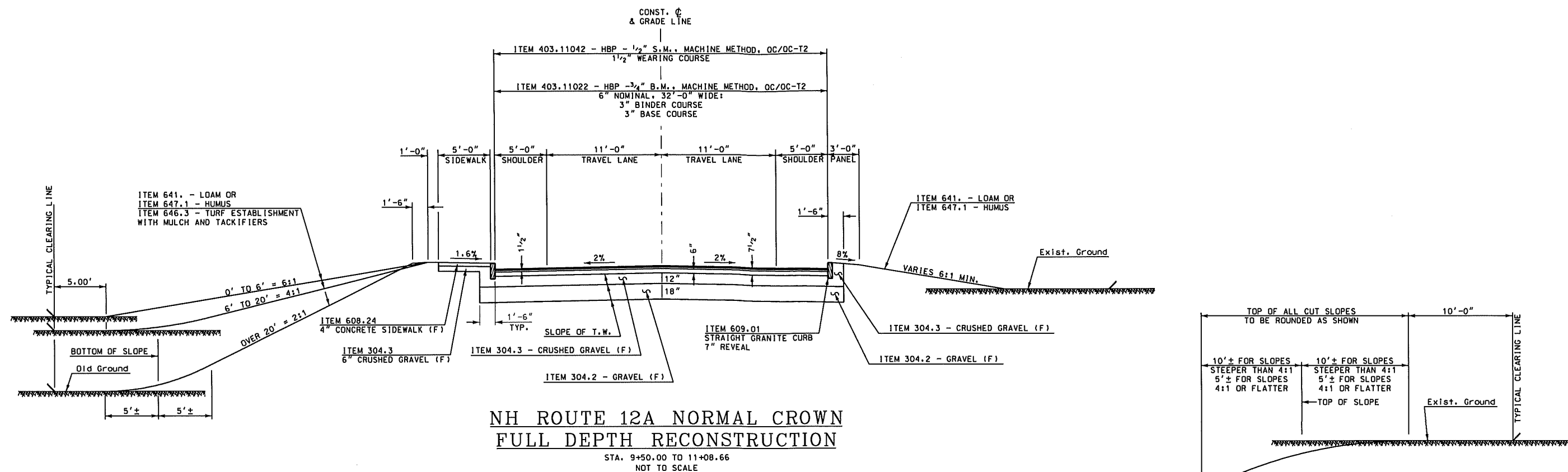
SHEET 2 OF 2

CITY OF LEBANON, NEW HAMPSHIRE

STANDARD SYMBOLS (2 OF 2)

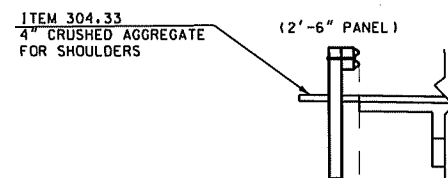
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
7-21-23	stdsyml 2	13558A	4	167

SOR PROCESSED				REVISIONS AFTER PROPOSAL			
DATE	-	DATE	-	NUMBER	DATE	STATION	STATION
NEW DESIGN	GMC	DATE	DATE2				
SHEET CHECKED	BMB	DATE	DATE3				
AS BUILT DETAILS							
DATE							



NH ROUTE 12A NORMAL CROWN
FULL DEPTH RECONSTRUCTION

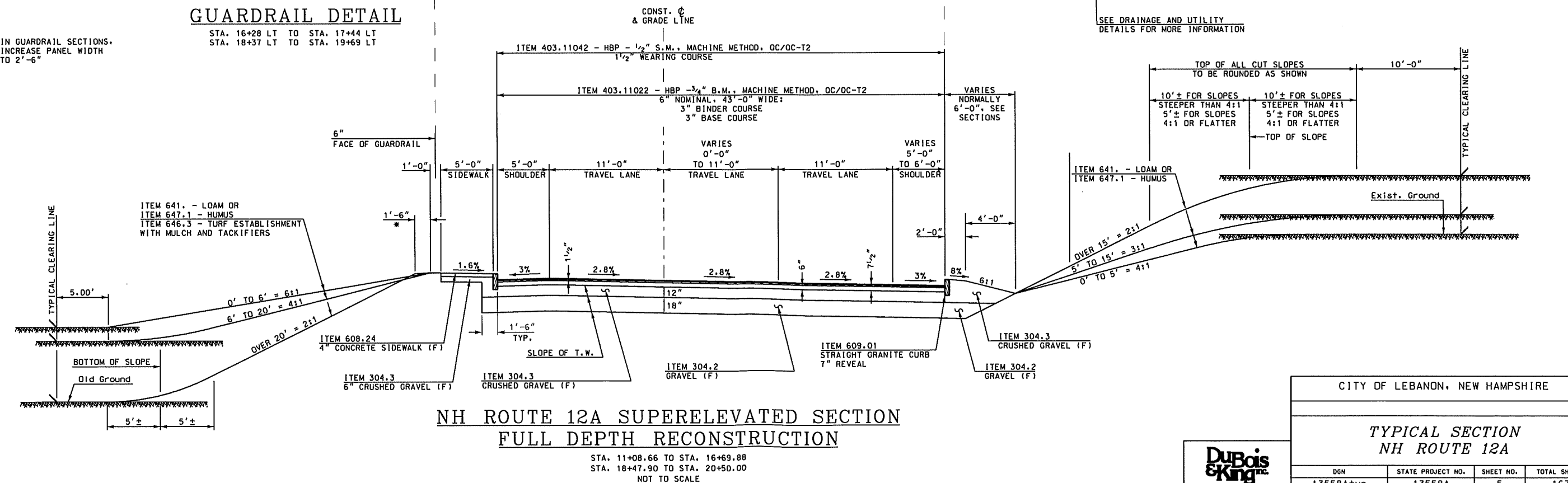
STA. 9+50.00 TO 11+08.66
NOT TO SCALE



GUARDRAIL DETAIL

STA. 16+28 LT	TO	STA. 17+44 LT
STA. 18+37 LT	TO	STA. 19+69 LT

* IN GUARDRAIL SECTIONS,
INCREASE PANEL WIDTH
TO 2'-6"



NH ROUTE 12A SUPERELEVATED SECTION
FULL DEPTH RECONSTRUCTION

STA. 11+08.66 TO STA. 16+69.88
STA. 18+47.90 TO STA. 20+50.00
NOT TO SCALE

UNDERDRAIN SECTION

STA. 13+00.00 RT TO STA. 15+50.00 RT

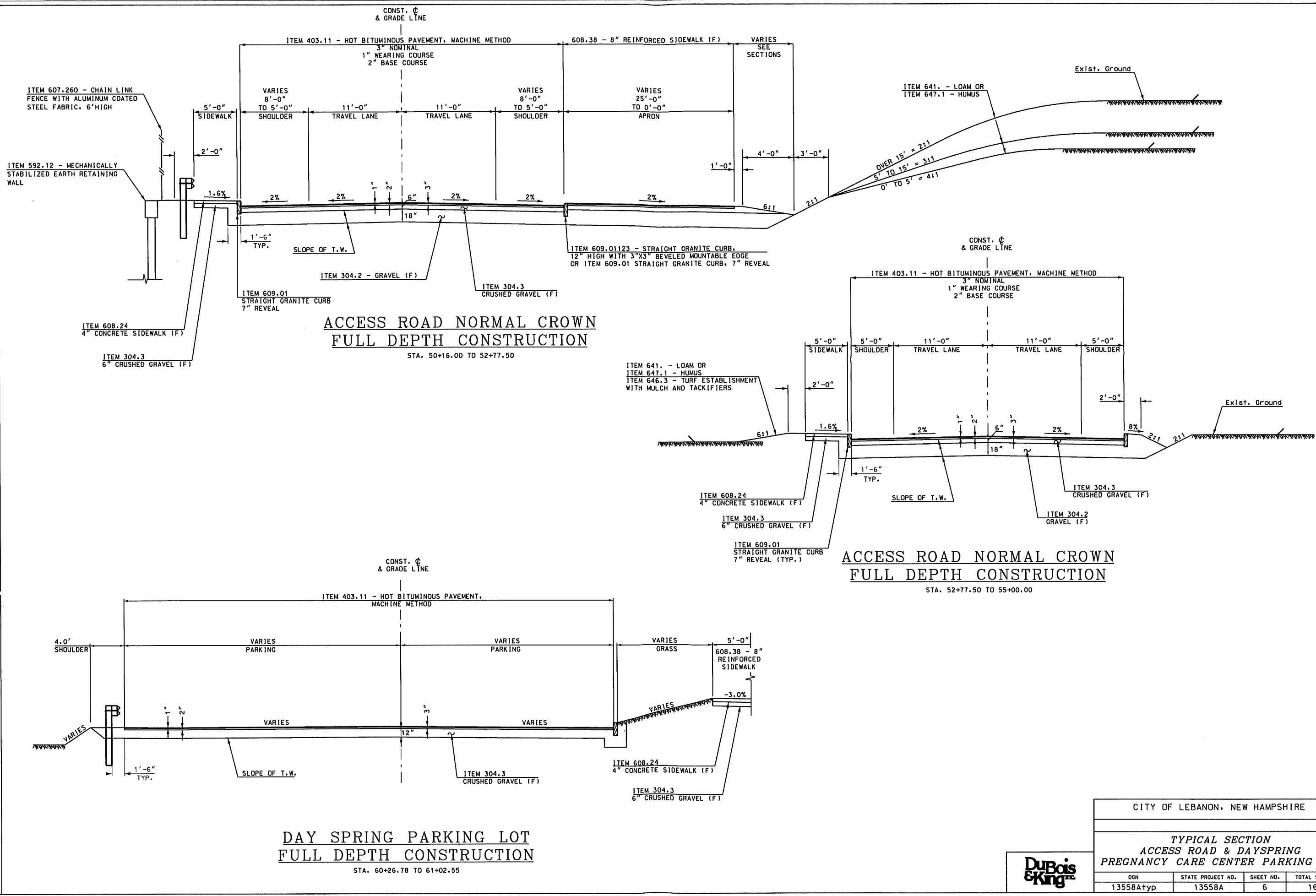
SEE DRAINAGE AND UTILITY
DETAILS FOR MORE INFORMATION

CITY OF LEBANON, NEW HAMPSHIRE

TYPICAL SECTION
NH ROUTE 12A

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A+vp	13558A	5	167

REVISIONS AFTER PROPOSAL		DESCRIPTION		STATION		DATE		NUMBER	
SDR PROCESSED	-	GMC	DATE DATE1	DATE DATE2	DATE DATE3	DATE			
NEW DESIGN		BMB							
SHEET CHECKED									
AS BUILT DETAILS									

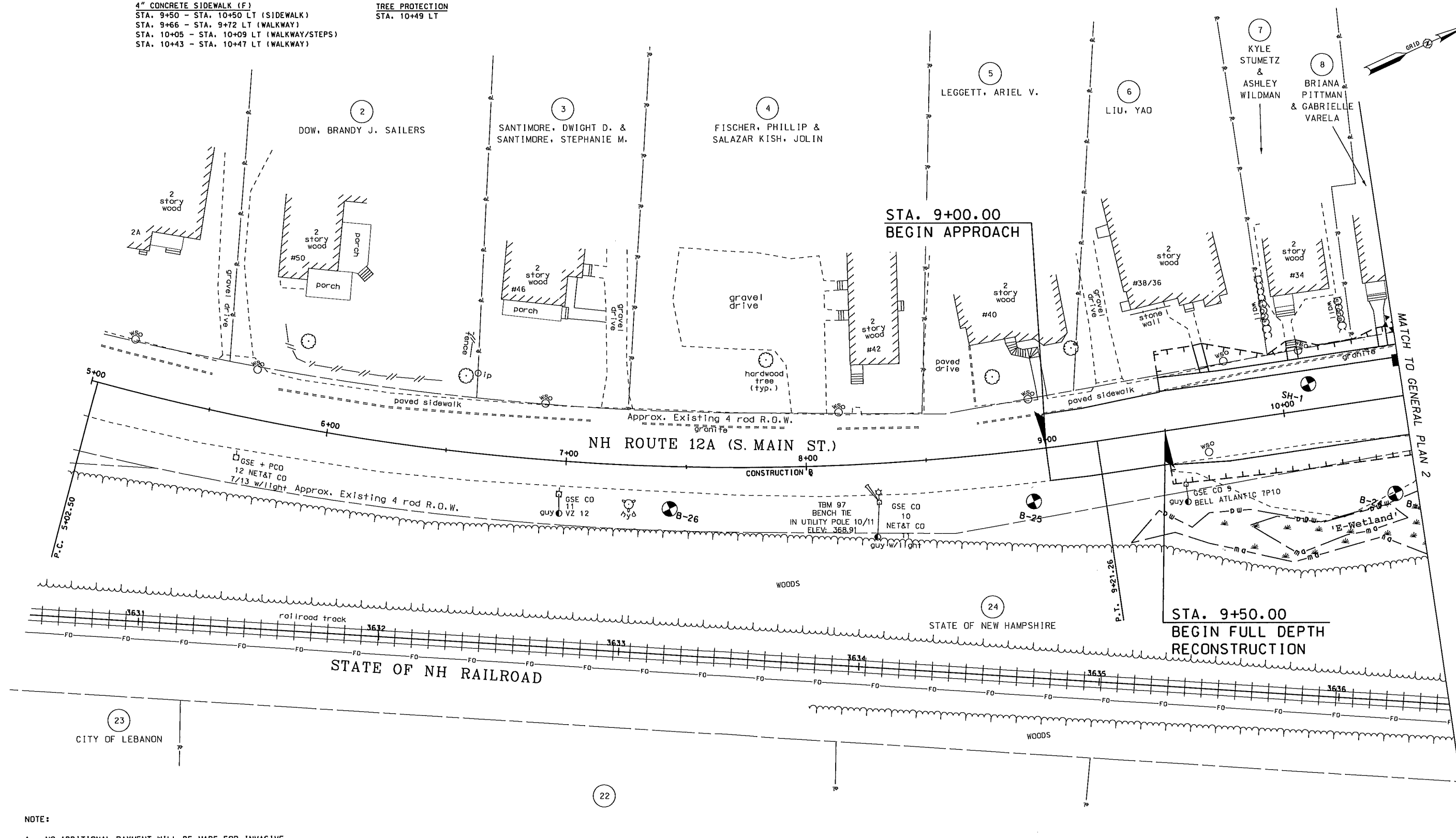


CITY OF LEBANON, NEW HAMPSHIRE			
TYPICAL SECTION ACCESS ROAD & DAYSPRING PREGNANCY CARE CENTER PARKING LOT			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A typ	13558A	6	167

[illegible]

4" CONCRETE SIDEWALK (F)
STA. 9+50 - STA. 10+50 LT (SIDEWALK)
STA. 9+66 - STA. 9+72 LT (WALKWAY)
STA. 10+05 - STA. 10+09 LT (WALKWAY/STEPS)
STA. 10+43 - STA. 10+47 LT (WALKWAY)

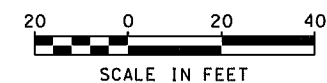
TREE PROTECTION
STA. 10+49 LT



NOTE:

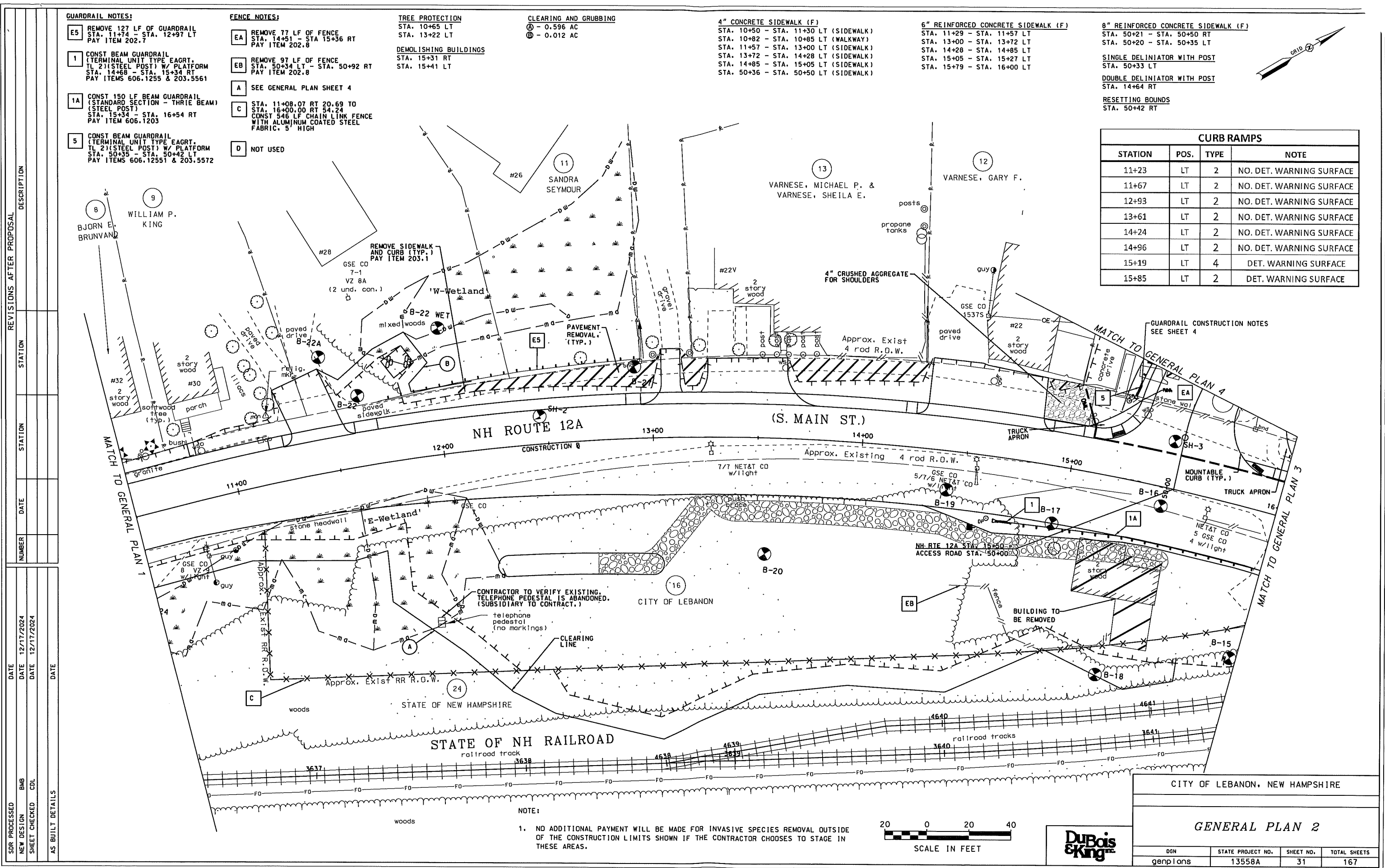
1. NO ADDITIONAL PAYMENT WILL BE MADE FOR INVASIVE SPECIES REMOVAL OUTSIDE OF THE CONSTRUCTION LIMITS SHOWN IF THE CONTRACTOR CHOOSES TO STAGE IN THESE AREAS.

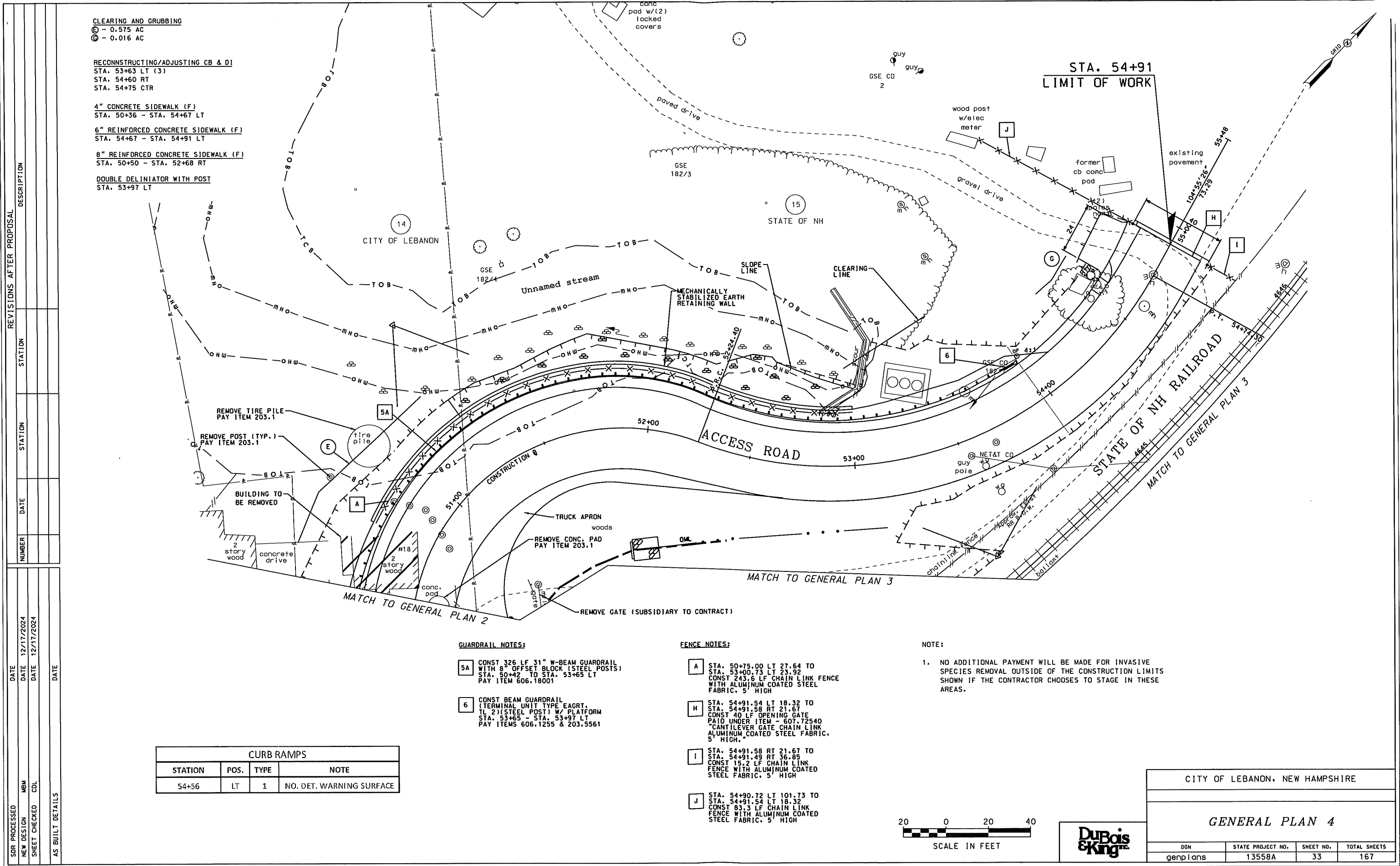
CURB RAMPS			
STATION	POS.	TYPE	NOTE
9+70	LT	10	NO. DET. WARNING SURFACE



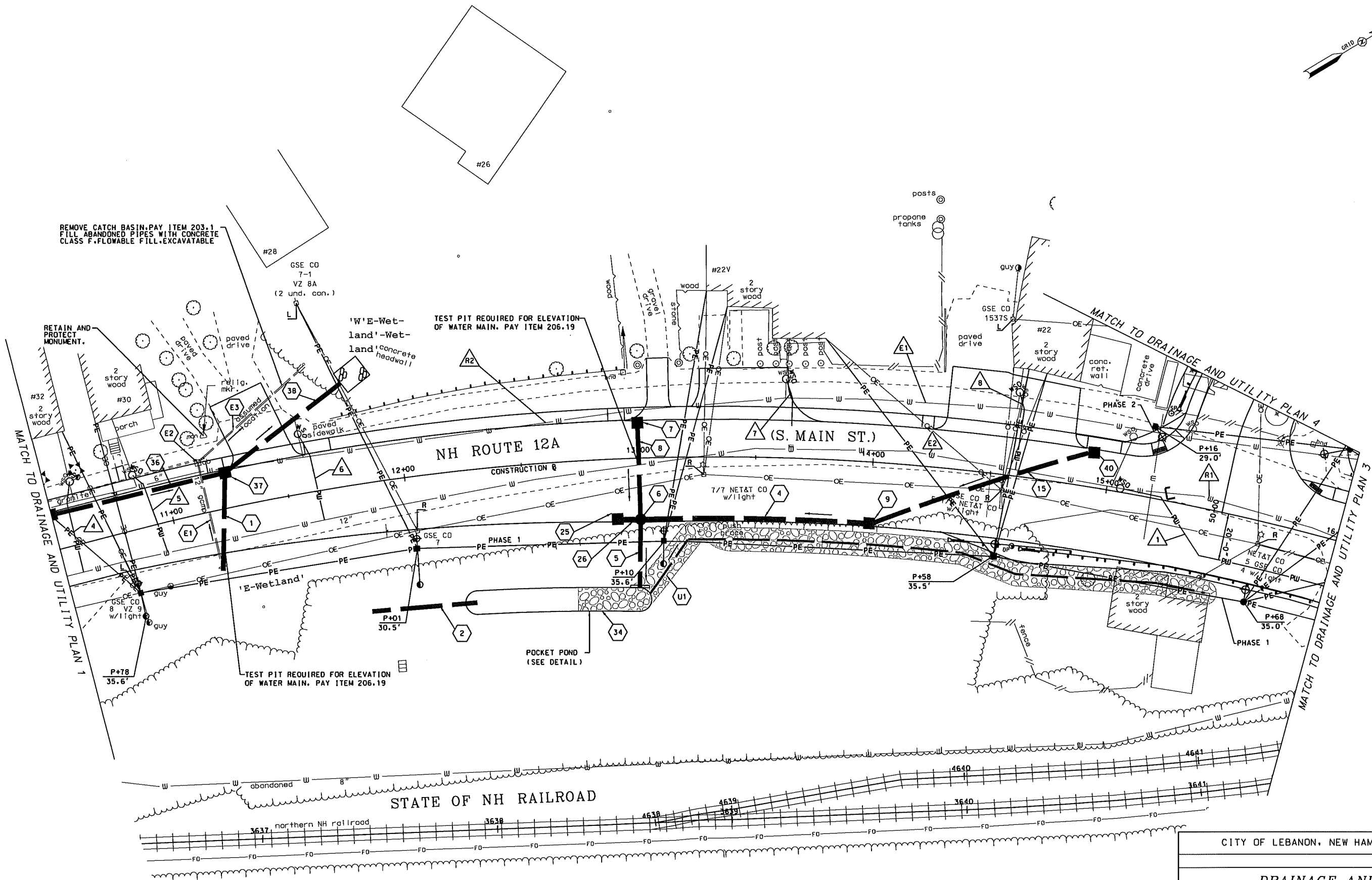
**DuBois
& King**

CITY OF LEBANON, NEW HAMPSHIRE			
GENERAL PLAN 1			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
genplans	13558A	30	167



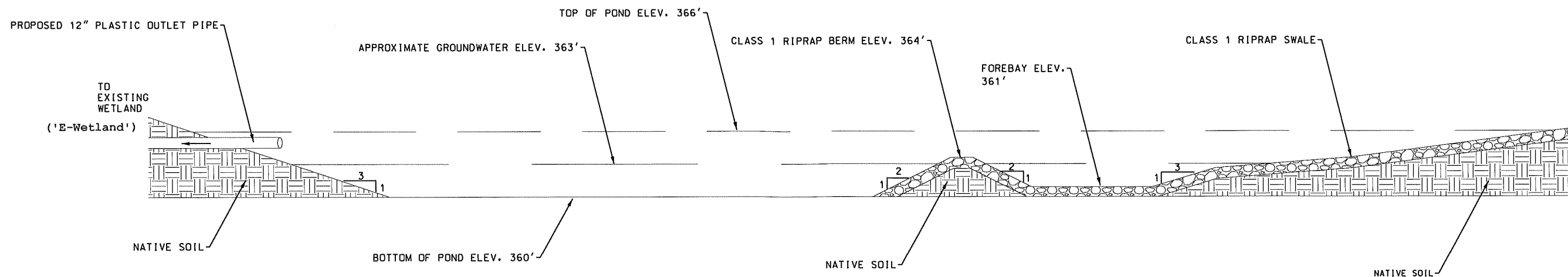


REVISIONS AFTER PROPOSAL		STATION	DATE	NUMBER	DESCRIPTION
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SHEET CHECKED	RLT		DATE 12/17/2024		
AS BUILT DETAILS			DATE		

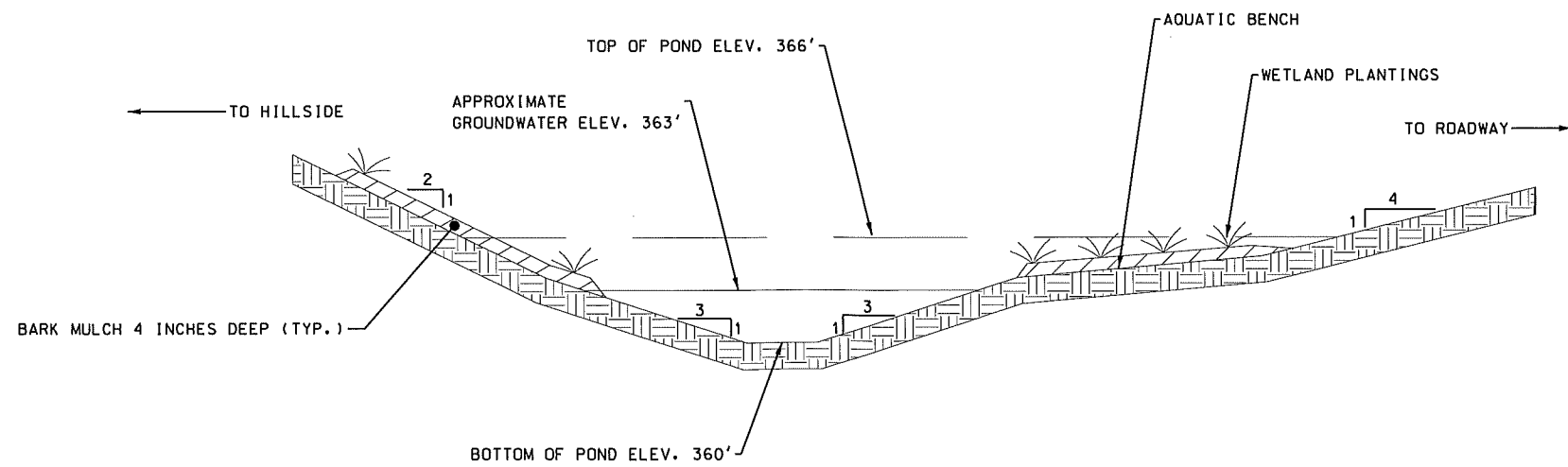


CITY OF LEBANON, NEW HAMPSHIRE			
DRAINAGE AND UTILITY PLAN 2			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
drnp1ans	13558A	39	167

SDR PROCESSED	DATE -			
	NEW DESIGN	DATE	DATE2	DATE3
	SHEET CHECKED	BMB	DATE	DATE
	AS BUILT DETAILS			
REVISIONS AFTER PROPOSAL	DESCRIPTION	STATION	STATION	DATE



POCKET POND PROFILE
APPROX. SCALE 1"=10'

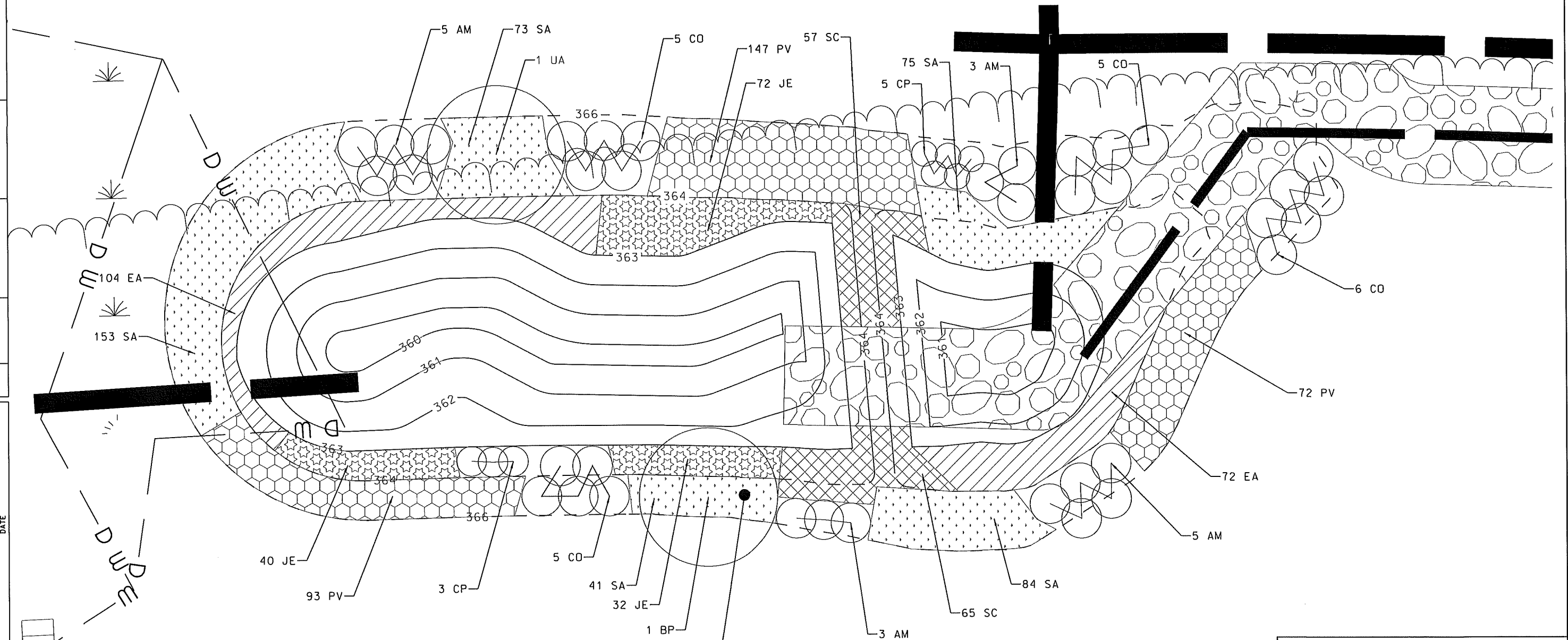


POCKET POND CROSS SECTION
APPROX. SCALE 1"=5'
APPROX. STATION 12+60

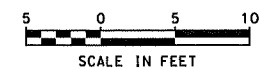


CITY OF LEBANON, NEW HAMPSHIRE			
DRAINAGE AND UTILITY DETAILS 6			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A+typ	13558A	48	167

PLANT SCHEDULE						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
TREES						
BP	1	<i>Betula papyrifera</i>	Paper Birch	2" Cal.	B&B	upland
UA	1	<i>Ulmus americana</i>	American Elm	2" Cal.	B&B	wet
SHRUBS						
AM	16	<i>Aronia melanocarpa</i>	Black Chokeberry	#5	Cont.	5' O.C.
CO	21	<i>Cephalanthus occidentalis</i>	Buttonbush	#5	Cont.	5' O.C.
CP	8	<i>Comptonia peregrina</i>	Sweetfern	#5	Cont.	5' O.C.
HERBACEOUS PLANTINGS						
EA	176	<i>Equisetum arvense</i>	Horsetail		#SP4	18" O.C.
JE	144	<i>Juncus effusus</i>	Common Rush		#SP4	18" O.C.
PV	312	<i>Panicum virgatum</i>	Switchgrass		#SP4	18" O.C.
SC	122	<i>Solidago caesia</i>	Bluestemmed Goldenrod		#SP4	18" O.C.
SA	426	<i>Symphyotrichum novae-anglae</i>	New England Aster		#SP4	18" O.C.
SEED						
-		Panicum virgatum (New England ecotype) - overseed at rate of 1 oz. per 1000 square feet				



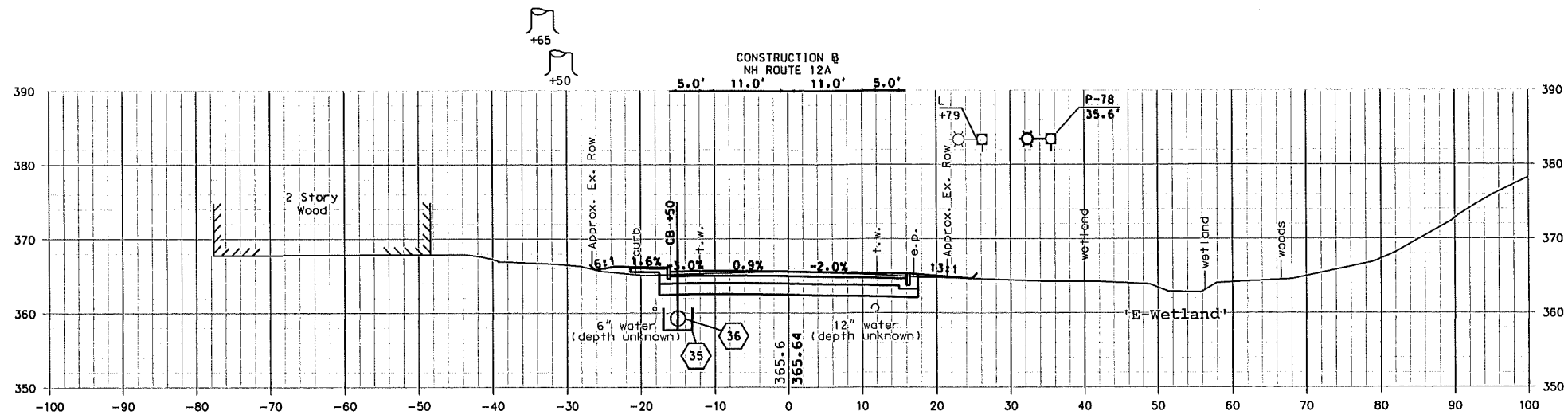
BARK MULCH 3" DEEP AROUND PERENNIALS
AND WOODY PLANTS, TYP., KEEP MULCH
AWAY FROM STEMS AND CROWN OF PLANTS



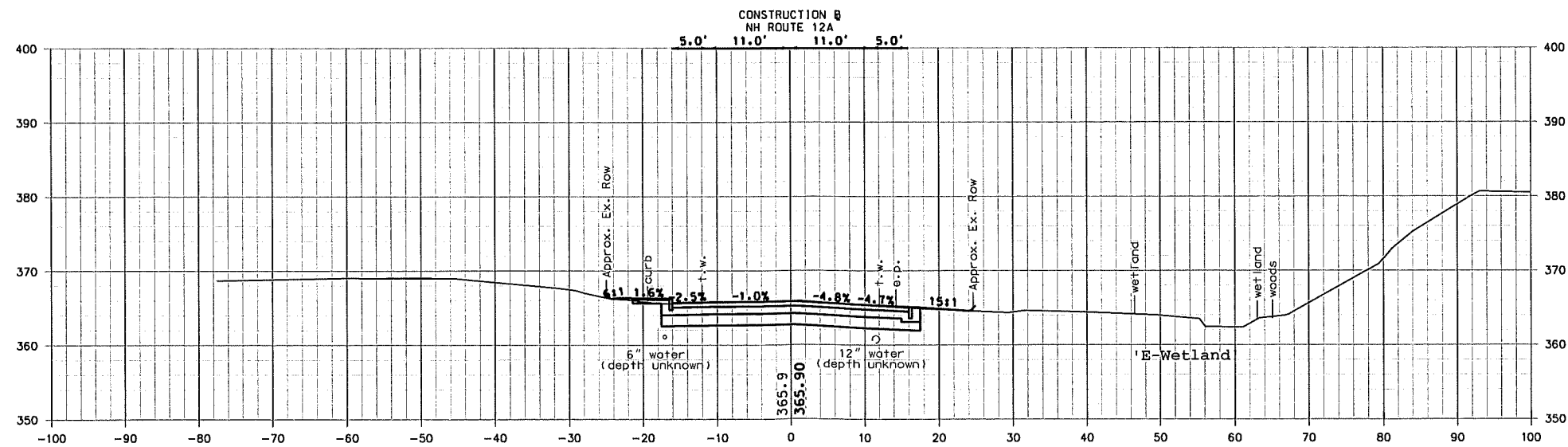
**DuBois
& KingTM**

CITY OF LEBANON, NEW HAMPSHIRE			
<i>DRAINAGE AND UTILITY DETAILS 7</i>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A typ	13558A	49	167

SDR PROCESSED				REVISIONS AFTER PROPOSAL			
NEW DESIGN	BMB	DATE	12/17/2024	NUMBER	DATE	STATION	DESCRIPTION
SHEET CHECKED	CDL	DATE	12/17/2024				
AS BUILT DETAILS							



10+50



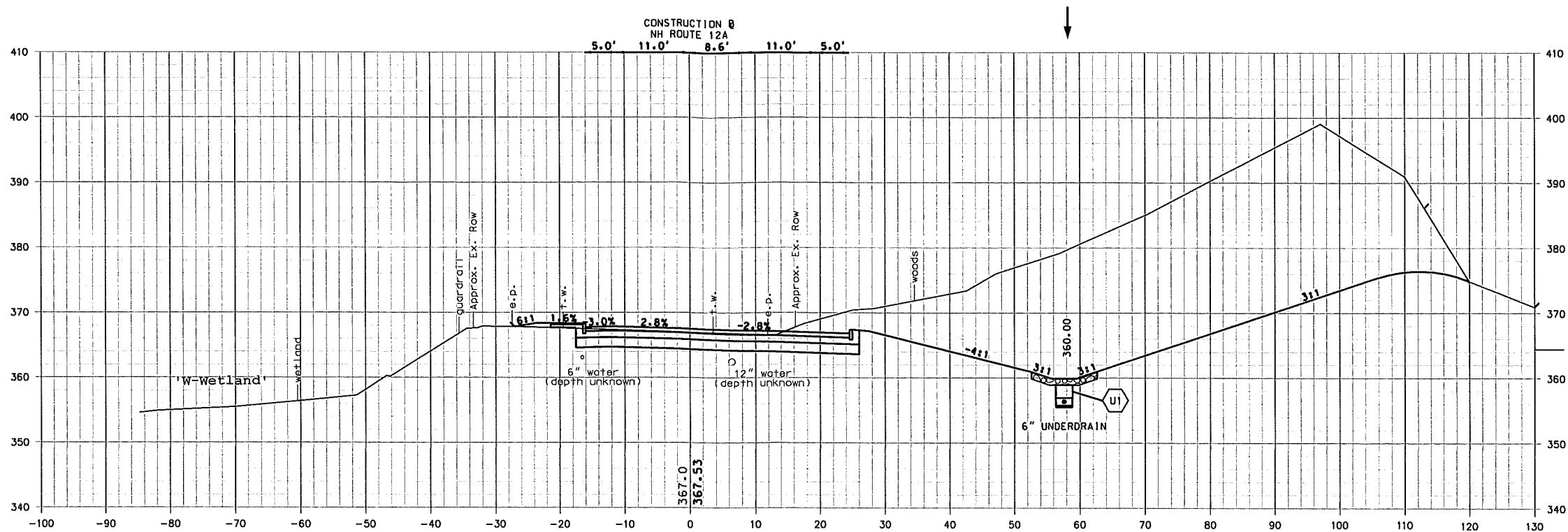
10+00

S. MAIN ST.
(NH ROUTE 12A)

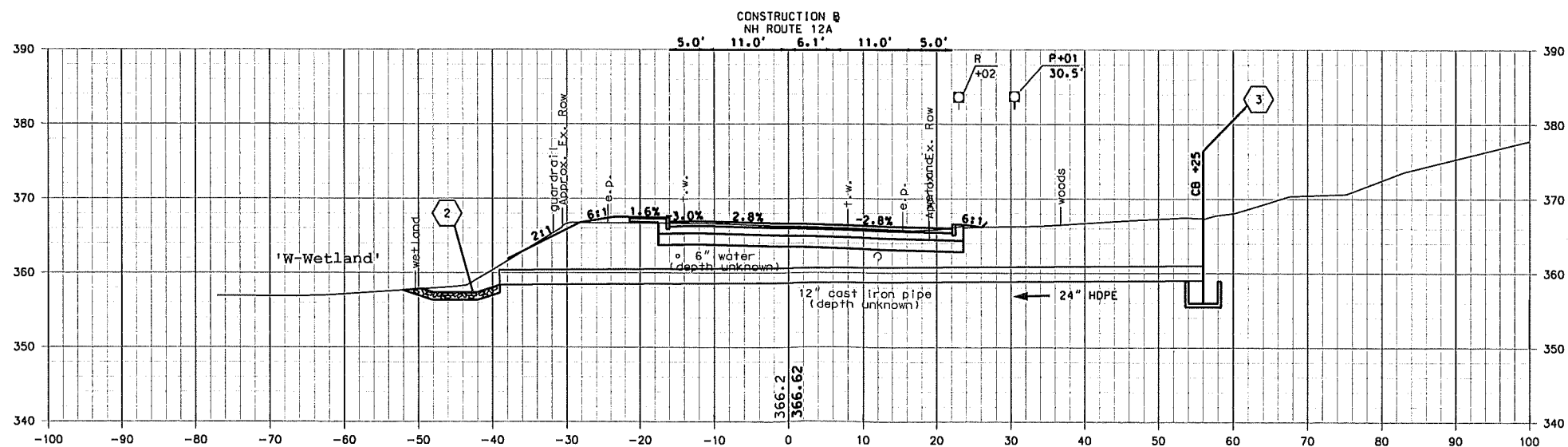


SHEET TOTALS			
COMMON EXCAV.	— C.Y.	ROCK EXCAV.	— C.Y.
FILL	— C.Y.	MUCK EXCAV.	— C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A XS	13558A	80	167

SDR PROCESSED		DATE		REVISIONS AFTER PROPOSAL	
NEW DESIGN	BMB	DATE	12/17/2024	STATION	DESCRIPTION
SHEET CHECKED	CDL	DATE	12/17/2024	DATE	
AS BUILT DETAILS		DATE		NUMBER	



12+50



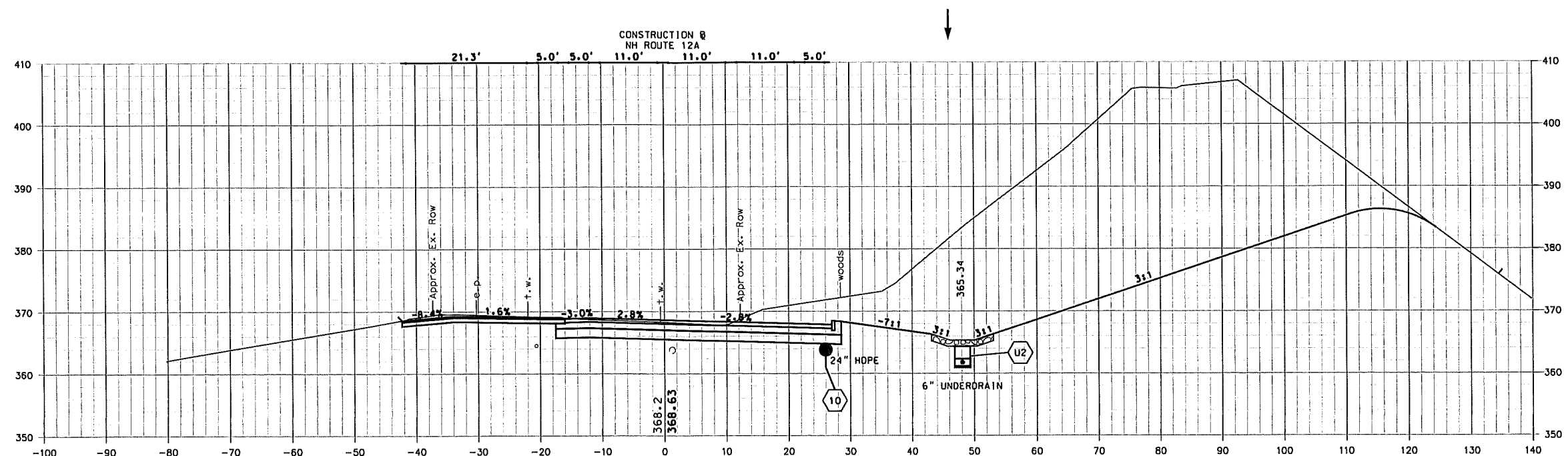
12+00

S. MAIN ST.
(NH ROUTE 12A)

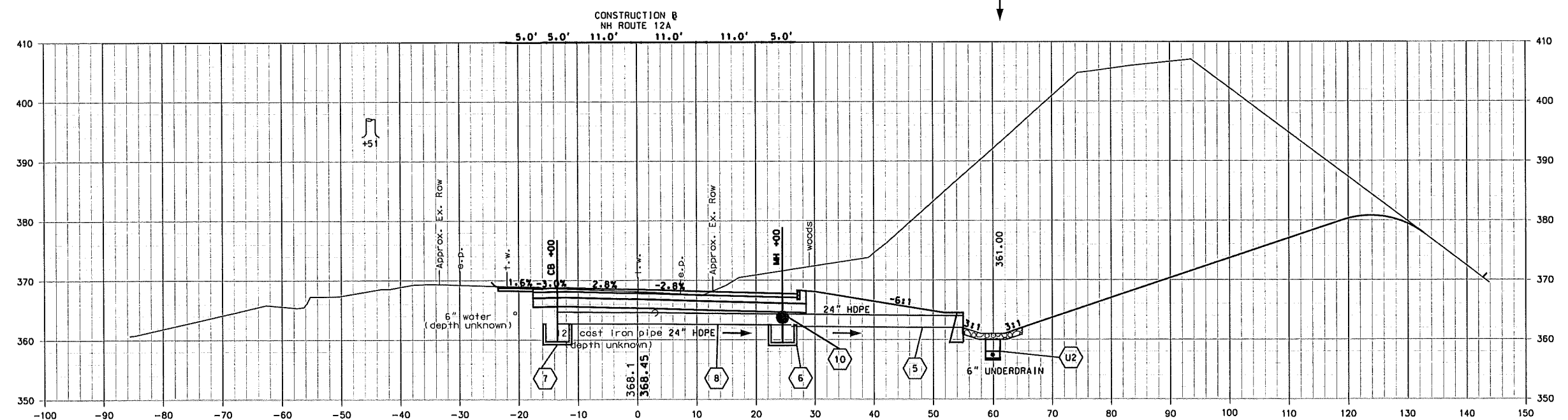


COMMON EXCAV.		SHEET TOTALS		ROCK EXCAV.	
FILL		C.Y.		C.Y.	
MUCK EXCAV.		C.Y.		C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS		
13558A xs	13558A	82	167		

SDR PROCESSED	DATE	REVISIONS AFTER PROPOSAL			
NEW DESIGN	BMB	DATE	12/17/2024		
SHEET CHECKED	CDL	DATE	12/17/2024		
AS BUILT DETAILS		DATE			
		NUMBER	DATE	STATION	STATION
					DESCRIPTION



13+09
DRIVE LT



13+00
DRIVE LT

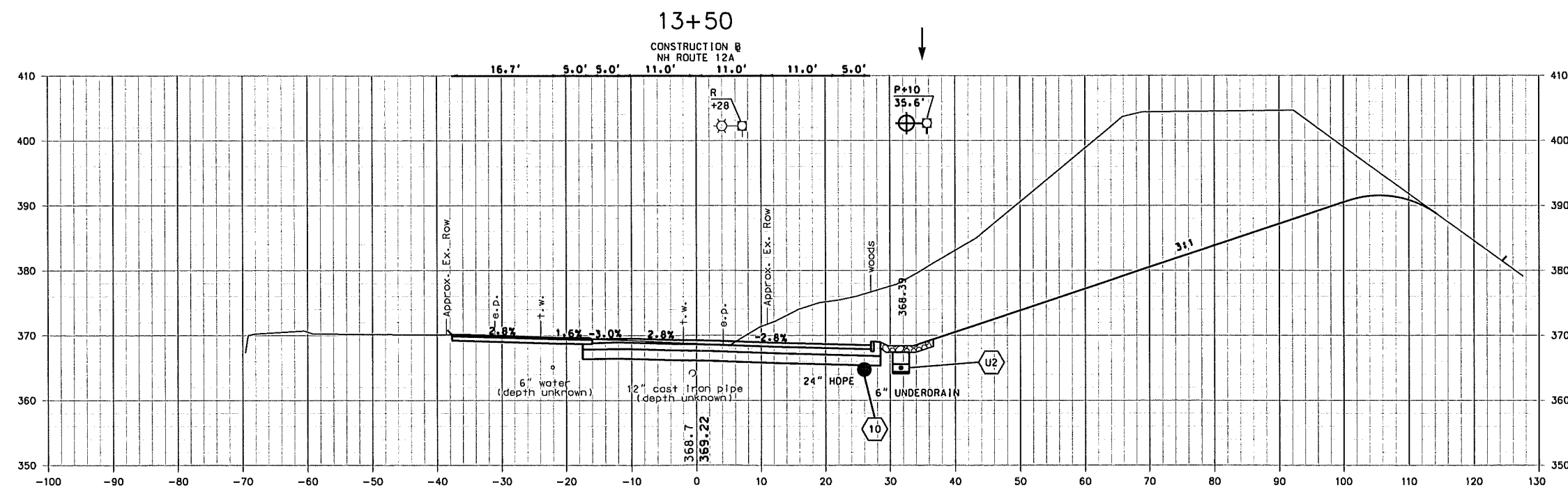
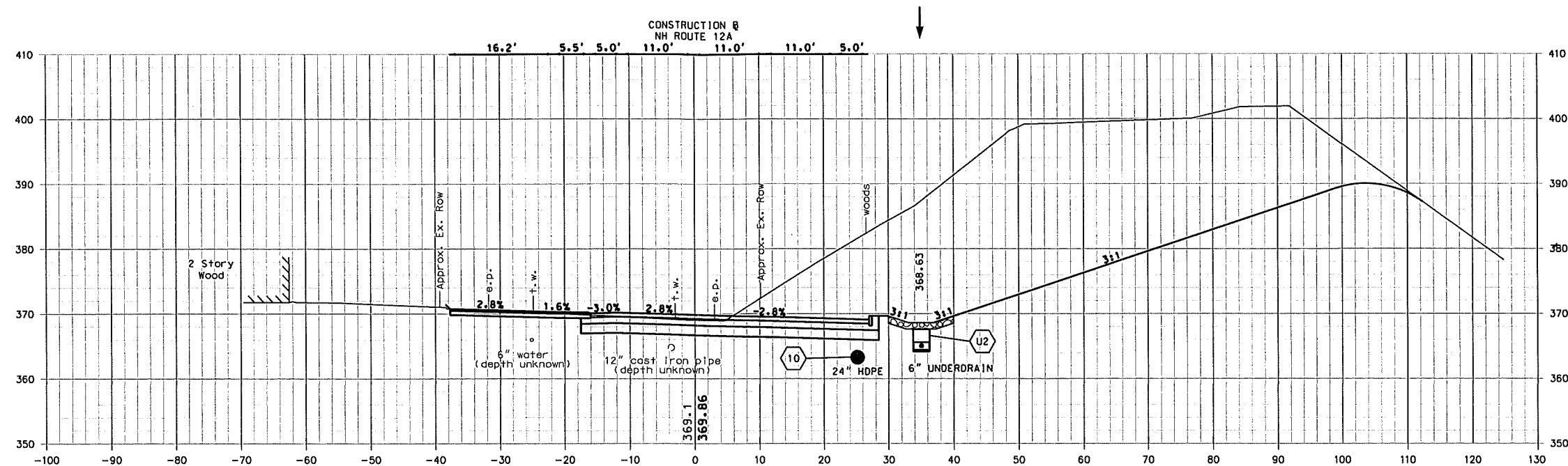
S. MAIN ST.
(NH ROUTE 12A)



SHEET TOTALS			
COMMON EXCAV. _____	C.Y.	ROCK EXCAV. _____	C.Y.
FILL _____	C.Y.	MUCK EXCAV. _____	C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A xs	13558A	83	167

SDR PROCESSED		DATE	
NEW DESIGN	BMB	DATE	12/17/2024
SHEET CHECKED	CDL	DATE	12/17/2024
AS BUILT DETAILS			

REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION



13+32
DRIVE LT

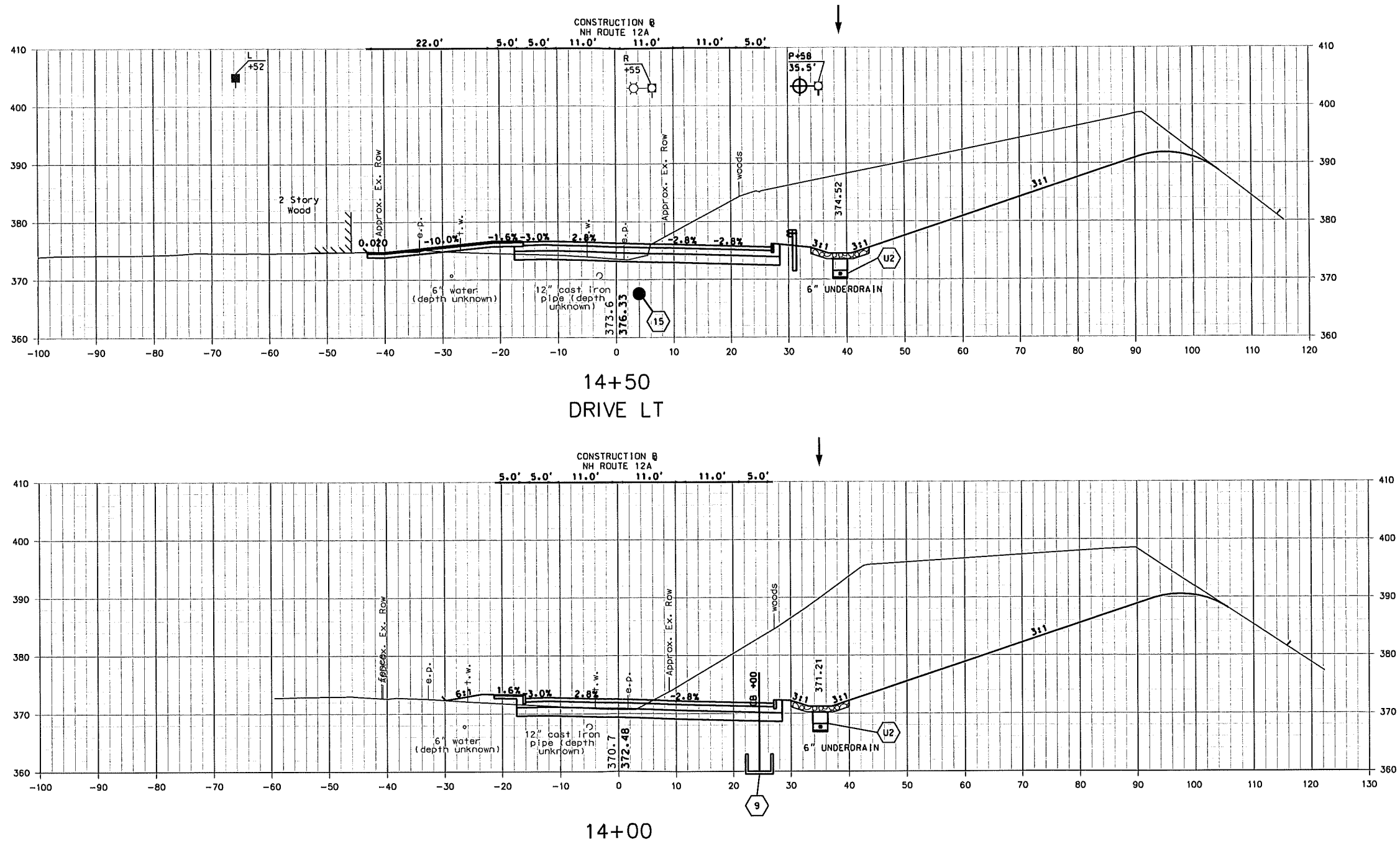
S. MAIN ST.
(NH ROUTE 12A)



SHEET TOTALS			
COMMON EXCAV. _____ C.Y.	ROCK EXCAV. _____ C.Y.		
FILL _____ C.Y.	MUCK EXCAV. _____ C.Y.		
DOM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A xs	13558A	84	167

REVISIONS AFTER PROPOSAL				DESCRIPTION	
NUMBER	DATE	STATION	STATION		

SDR PROCESSED	DATE	DATE	DATE	DATE
NEW DESIGN	BMB	12/17/2024		
SHEET CHECKED	COL	12/17/2024		
AS BUILT DETAILS				

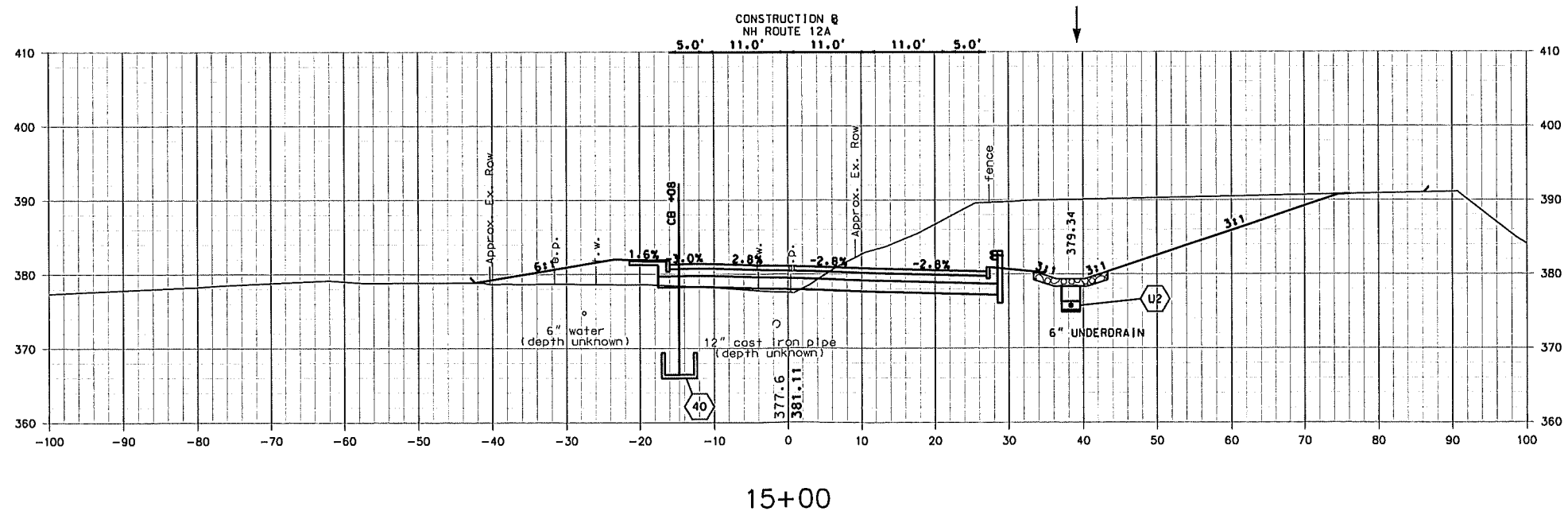
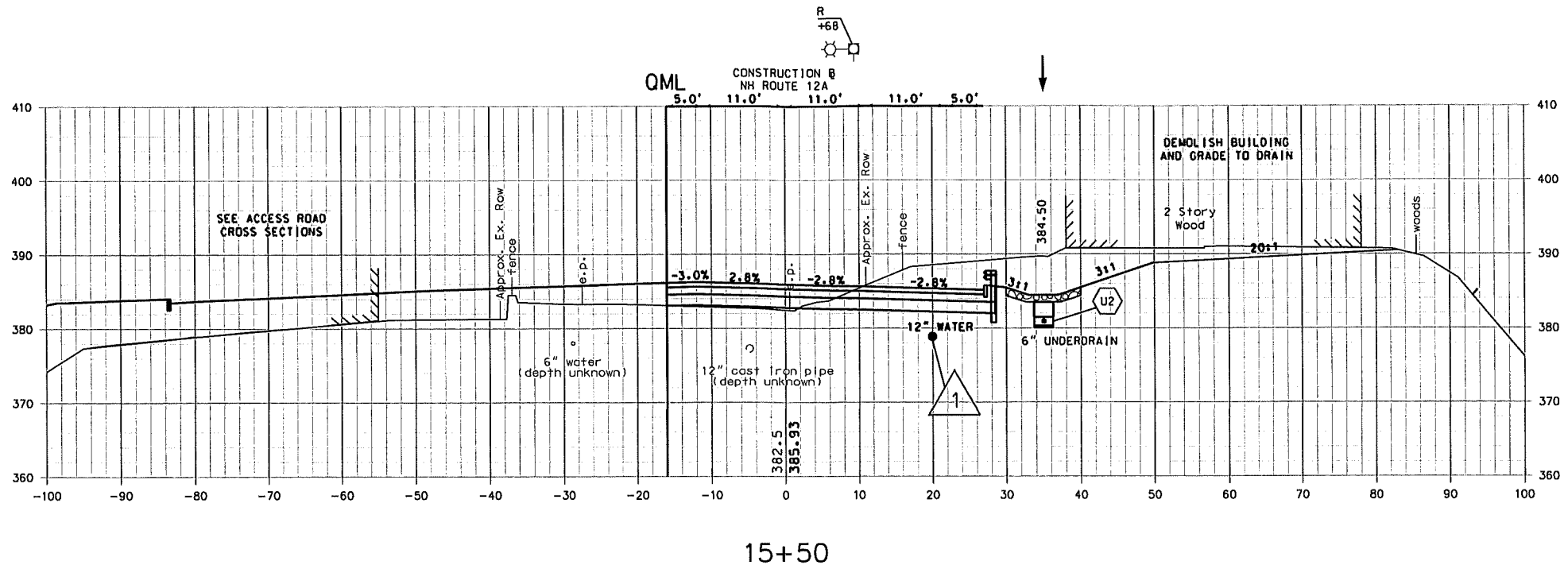


S. MAIN ST.
(NH ROUTE 12A)



SHEET TOTALS					
COMMON EXCAV.	—	C.Y.	ROCK EXCAV.	—	C.Y.
FILL	—	C.Y.	MUCK EXCAV.	—	C.Y.
DGN	STATE PROJECT NO.		SHEET NO.		TOTAL SHEETS
13558A XS	13558A		85		167

SDR PROCESSED		REVISIONS AFTER PROPOSAL	
NEW DESIGN	DATE	STATION	DESCRIPTION
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SHEET CHECKED	DATE	STATION	
CDL	12/17/2024		
AS BUILT DETAILS		NUMBER	DATE
	DATE		

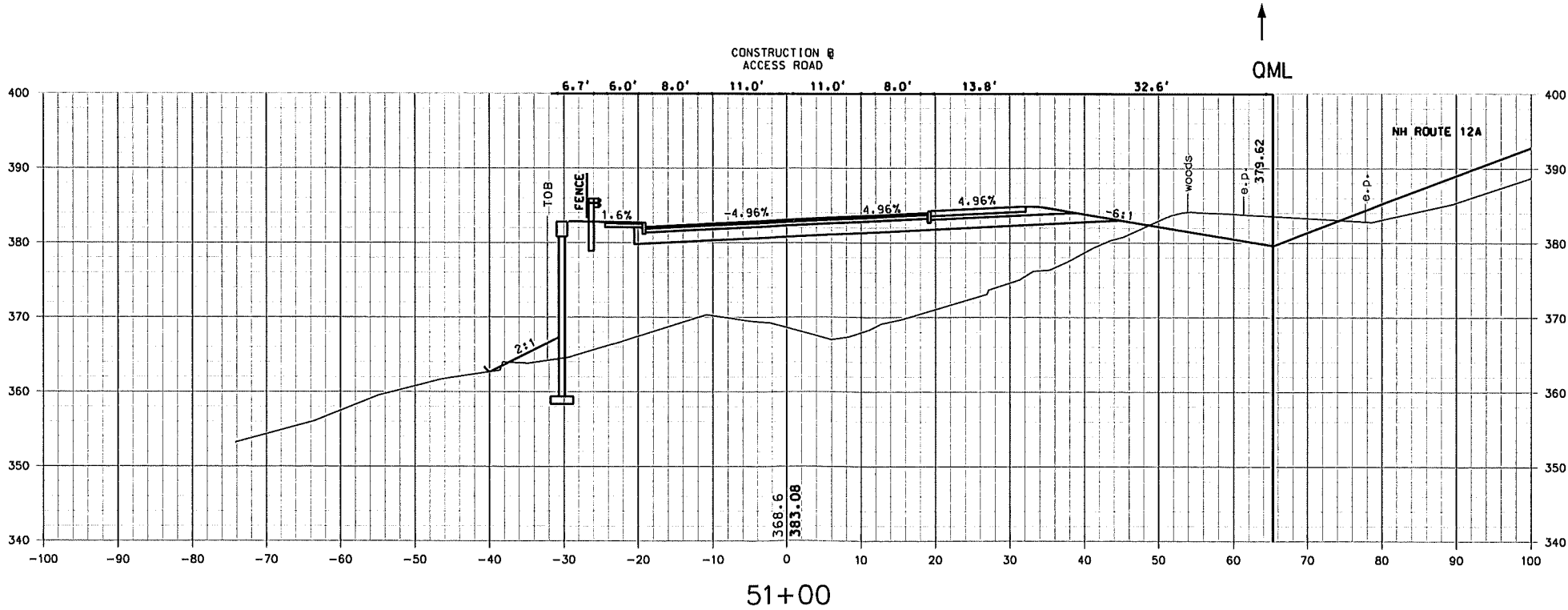
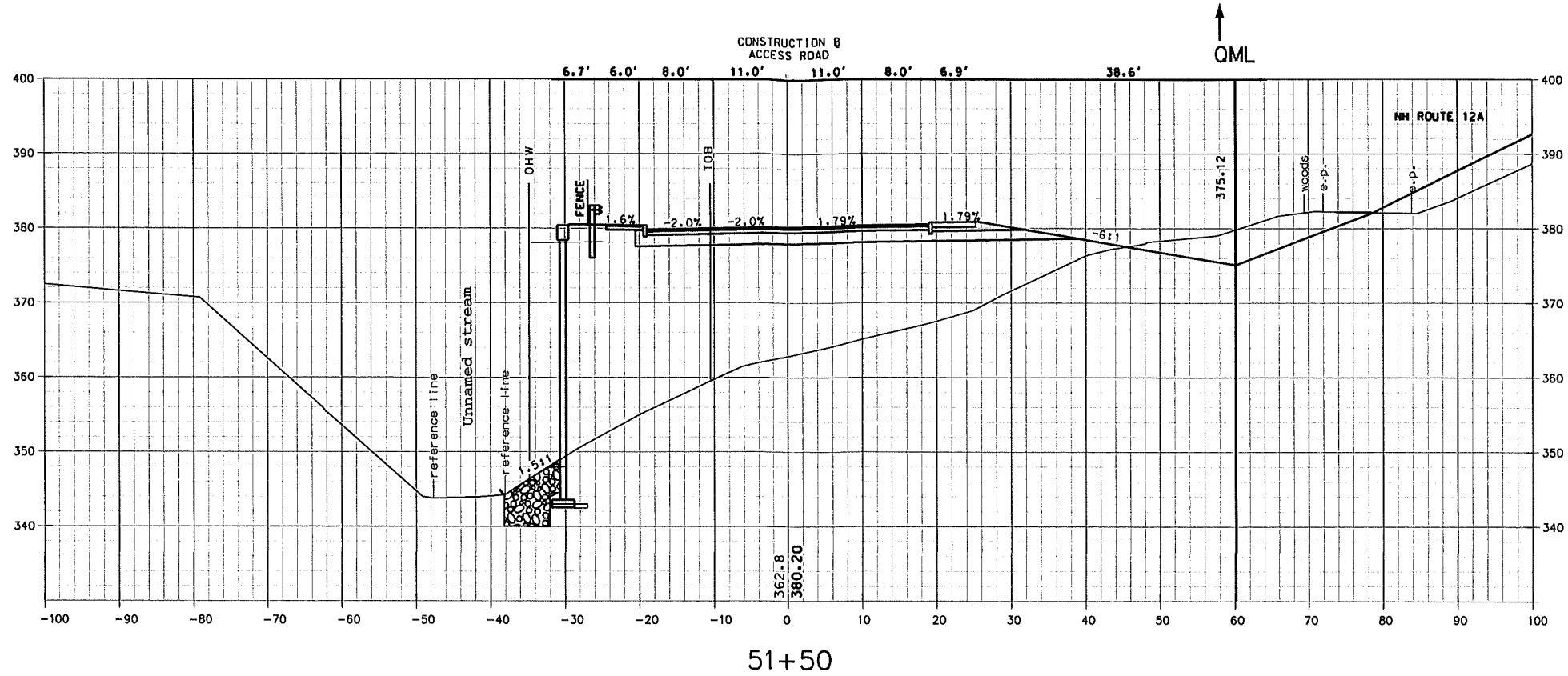


S. MAIN ST.
(NH ROUTE 12A)



SHEET TOTALS			
COMMON EXCAV.	C.Y.	ROCK EXCAV.	C.Y.
FILL	C.Y.	MUCK EXCAV.	C.Y.
DON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A XS	13558A	86	167

SDR PROCESSED		DATE		REVISIONS AFTER PROPOSAL	
NEW DESIGN	BMB	DATE	12/17/2024	STATION	DESCRIPTION
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AS BUILT DETAILS		DATE		STATION	

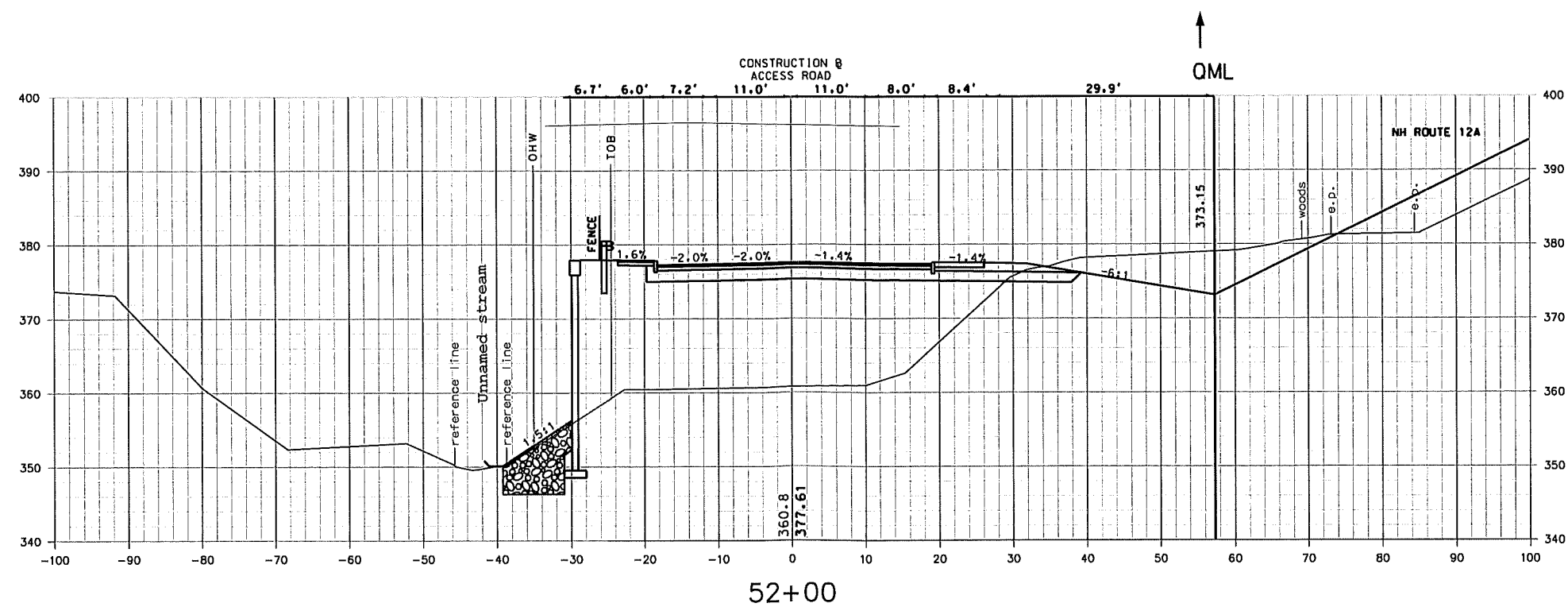
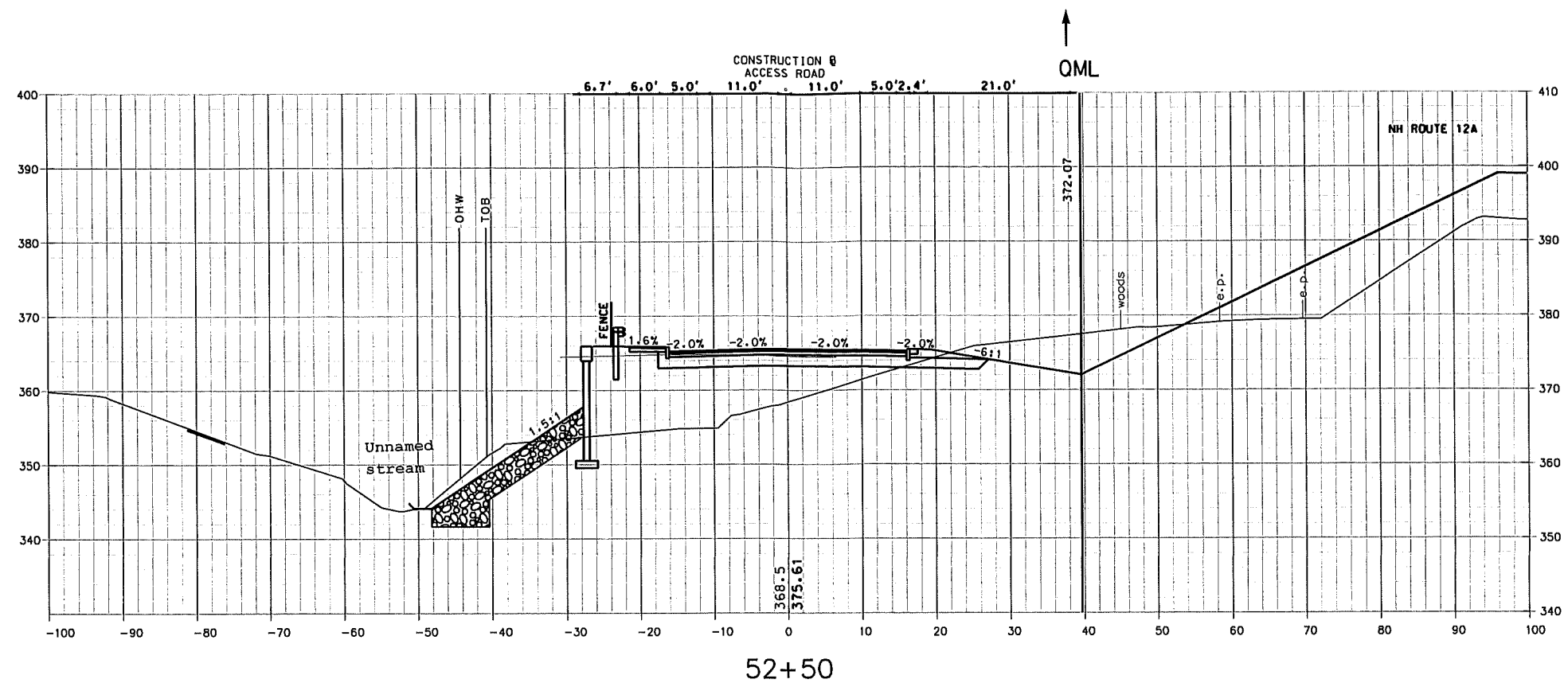


ACCESS ROAD



SHEET TOTALS			
COMMON EXCAV.	— C.Y.	ROCK EXCAV.	— C.Y.
FILL	— C.Y.	MUCK EXCAV.	— C.Y.
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A xs	13558A	94	167

SDR PROCESSED		DATE		REVISIONS AFTER PROPOSAL			
NEW DESIGN	BMB	DATE	12/17/2024	NUMBER	DATE	STATION	DESCRIPTION
SHEET CHECKED	CDL	DATE	12/17/2024				
AS BUILT DETAILS							



ACCESS ROAD



SHEET TOTALS			
COMMON EXCAV. _____ C.Y.	ROCK EXCAV. _____ C.Y.		
FILL _____ C.Y.	MUCK EXCAV. _____ C.Y.		
DDN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A XS	13558A	95	167

SDR PROCESSED		DATE		DATE		DATE		DATE		AS BUILT DETAILS	
NEW DESIGN		DID		DATE		DATE		DATE		DATE	
SHEET CHECKED		BMB		DATE		DATE		DATE		DATE	
NUMBER		DATE		DATE		DATE		DATE		DATE	
STATION		STATION		STATION		STATION		STATION		STATION	
REVISIONS AFTER PROPOSAL		DESCRIPTION		DESCRIPTION		DESCRIPTION		DESCRIPTION		DESCRIPTION	

NOTES:

1. PROPERTY AND R.O.W LIMITS ARE APPROXIMATE, NO SURVEY BOUNDRY WORK HAS BEEN CONDUCTED.
2. WETLAND DELINEATION PERFORMED BY POWELL ASSET MAPPING IN 2024.
3. SURVEY WORK PERFORMED BY DUBOIS & KING, INC. IN SUMMER 2020, WITH SUPPLEMENTAL SURVEY BY OTHERS DONE PREVIOUSLY.
4. THE PROJECT AREA WITHIN FEMA ZONE "A/AE" AND FEMA ZONE "B" ACCORDING TO FLOOD MAP 33009C0893E, EFFECTIVE 2/20/2008.

WETLANDS AND DEEPWATER HABITAT IMPACTS

PEM1E - PALUSTRINE, EMERGENT, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED WETLAND
PERMANENT = 1405 SF
TEMPORARY = 667 SF

PSS1E - PALUSTRINE, SCRUB/SCRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED WETLAND
PERMANENT = 72 SF
TEMPORARY = 139 SF

PSS1Ex - PALUSTRINE, SCRUB/SCRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED, EXCAVATED WETLAND
PERMANENT = 1191 SF
TEMPORARY = 699 SF

R2UB1F - RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, COBBLE-GRAVEL, SEMIPERMANENTLY FLOODED
PERMANENT = 0 SF
TEMPORARY = 0 SF

SURFACE - PERENNIAL STREAM IMPACTS

PERMANENT = 606 SF / 192 LF
TEMPORARY = 46 SF

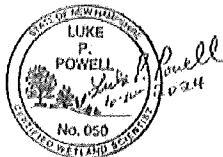
BANK - PERENNIAL STREAM IMPACTS

PERMANENT = 3669 SF
TEMPORARY = 641 SF

Wetland Classification

Wetlands were classified according to the standards published in Classification of Wetlands and Deepwater Habitats of the United States, by Lewis Cowardin et. al., December 1979, FWS/OBSS-79/31, US Fish & Wildlife Service.

PSS1E(x) - Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, (Excavated) wetland.
PSS1E: Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated.
PEM1E: Palustrine, Emergent, Broad-Leaved Deciduous, Seasonally Flooded/Saturated.
R2UB1F: Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel, Semipermanently Flooded.



Wetland Certification

Wetlands were delineated on August 7, 2024 by Luke Powell, Certified Wetland Scientist No. 50, and Tyson Morrill according to the standards published in the US Army Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) along with the Regional Supplement to the Corps Of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0, January 2012). Hydric soils were determined utilizing Field Indicators for Identifying Hydric Soils in New England (version 4, June 2020).

LEGEND

- EXISTING RIPRAP ARMORMENT

WETLANDS

PERMANENT IMPACT AREA - WETLAND

TEMPORARY IMPACT AREA - WETLAND

PERMANENT IMPACT AREA - SURFACE - PERENNIAL STREAM

TEMPORARY IMPACT AREA - SURFACE - PERENNIAL STREAM

PERMANENT IMPACT AREA - BANK - PERENNIAL STREAM

TEMPORARY IMPACT AREA - BANK - PERENNIAL STREAM
- FILL SLOPE

SILT FENCE

TEMPORARY CONSTRUCTION FENCE (DEMARCATIION FENCE)

PROJECT LIMITS OF DISTURBANCE

DELINEATED WETLANDS

TOP OF BANK

FEMA ZONE "A/AE"

FEMA ZONE "B"

ORDINARY HIGH WATER
- PEM1E PSS1E PSS1Ex WETLAND TYPE

R2UB1F DEEPWATER HABITAT TYPE

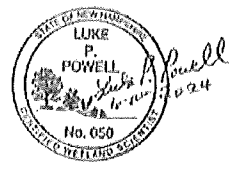
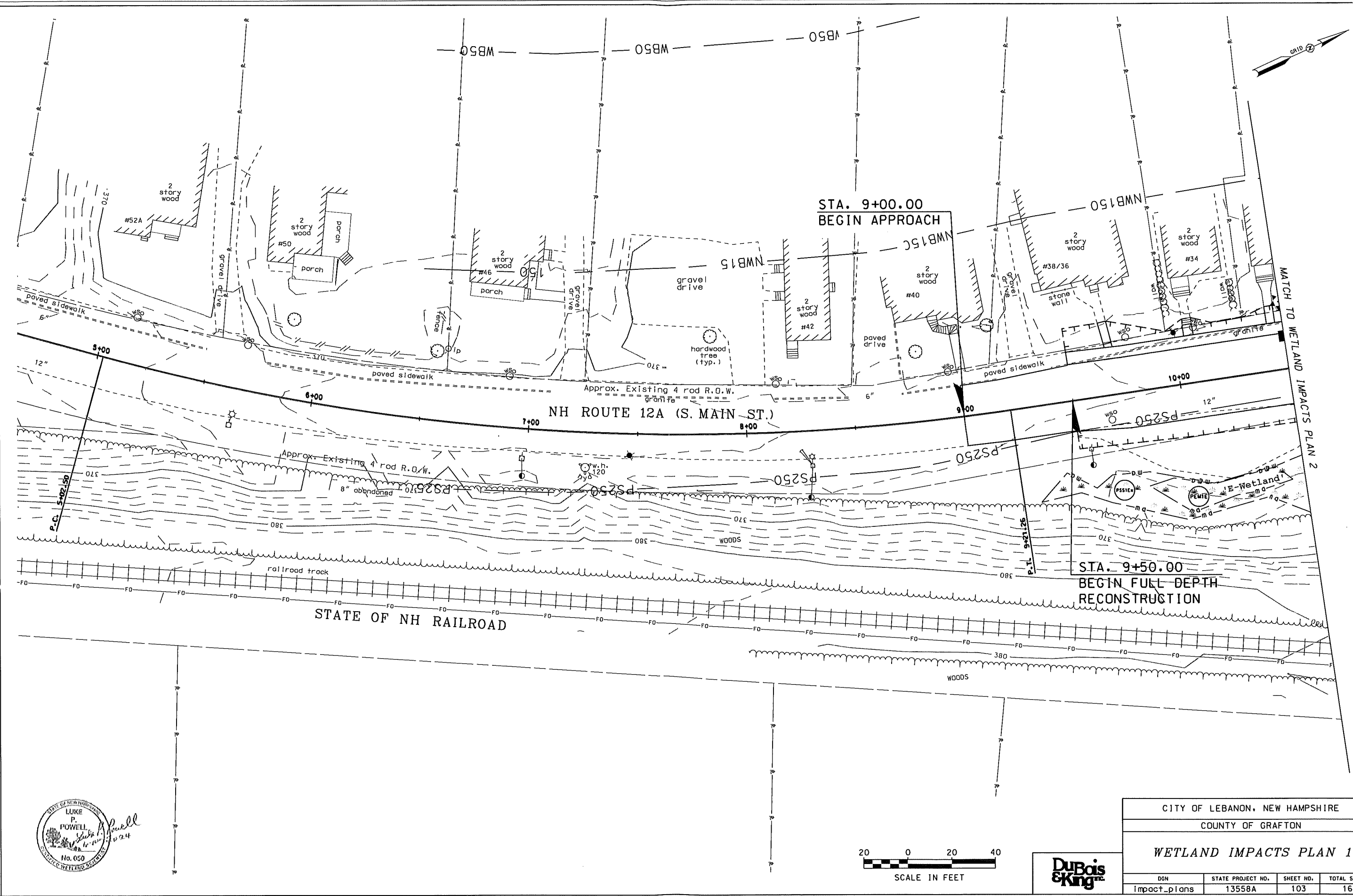
CITY OF LEBANON, NEW HAMPSHIRE

WETLAND IMPACTS NOTES & LEGEND

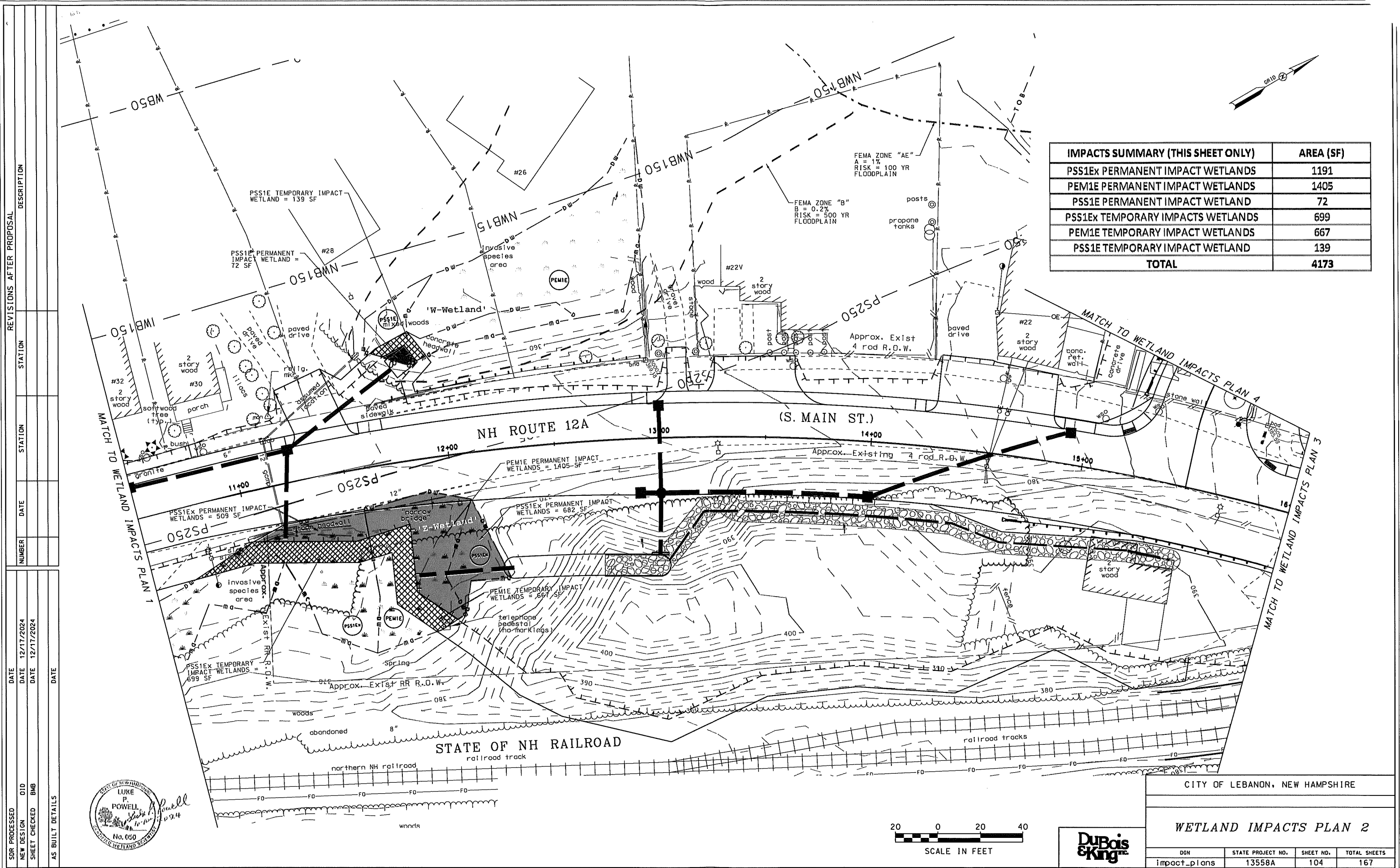
OWN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
impact_plans	13558A	102	167



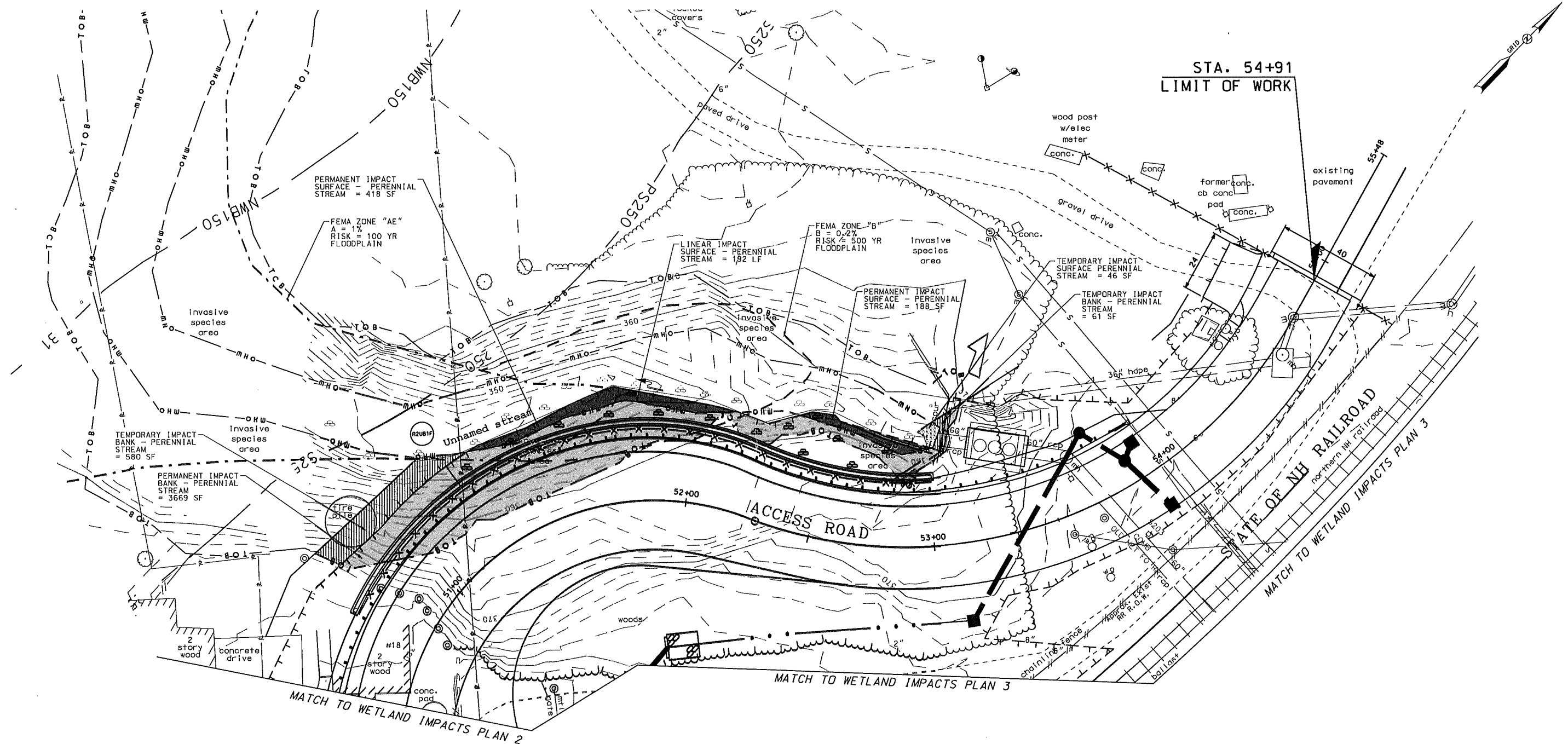
REVISIONS AFTER PROPOSAL		STATION	DATE	NUMBER	DESCRIPTION
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	SHEET CHECKED	DATE	12/17/2024		
	AS BUILT DETAILS	DATE			



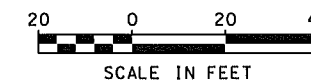
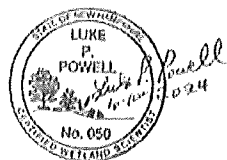
CITY OF LEBANON, NEW HAMPSHIRE			
COUNTY OF GRAFTON			
WETLAND IMPACTS PLAN 1			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
impact_plans	13558A	103	167



SDR PROCESSED		REVISIONS AFTER PROPOSAL			
	DATE	NUMBER	DATE	STATION	STATION
NEW DESIGN	D1D	DATE	12/17/2024		
SHEET CHECKED	BMB	DATE	12/17/2024		
AS BUILT DETAILS		DATE			



IMPACTS SUMMARY (THIS SHEET ONLY)	AREA (SF)	LINEAR (LF)
PERMANENT IMPACT BANK - PERENNIAL STREAM	3669	
PERMANENT IMPACT SURFACE - PERENNIAL STREAM	606	
TEMPORARY IMPACT BANK - PERENNIAL STREAM	641	
TEMPORARY IMPACT SURFACE - PERENNIAL STREAM	46	
LINEAR IMPACT SURFACE - PERENNIAL STREAM		192
TOTAL	4962	192



CITY OF LEBANON, NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
WETLAND IMPACTS PLAN 4			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
impact_plans	13558A	106	167

SDR PROCESSED NEW DESIGN SHEET CHECKED AS BUILT DETAILS	DATE	12/17/2024	NUMBER	DATE	STATION	STATION	DESCRIPTION	REVISIONS AFTER PROPOSAL
	DATE	12/17/2024						
	DATE							
	DATE							
	DATE							

EROSION CONTROL NOTES:

1.CONTRACTOR SHALL PREPARE A SWPPP IN ACCORDANCE WITH DOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 645.

2.THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED SOIL EXPOSED TO EROSION FROM STORM WATER AND WIND AT ANY TIME BY USING VEGETATIVE AND STRUCTURAL CONTROLS AND PROPER TIMING AND SEQUENCING OF CONSTRUCTION ACTIVITIES.

3.ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR IMMEDIATE CONSTRUCTION ACTIVITY. FLAG OR OTHERWISE DELINEATE AREAS NOT TO BE DISTURBED, EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION.

4.IF PROJECT IS GREATER THAN 5-ACRES, THE AREA OF UNSTABILIZED SOIL SHALL NOT EXCEED 5 ACRES AT ANY TIME UNLESS PROJECT PERMITS SPECIFICALLY PROVIDE FOR A GREATER AREA OF DISTURBANCE.

5.ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES TO BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THESE DRAWINGS, PER THESE NOTES AND DETAILS, AND ACCORDING TO MANUFACTURER’S RECOMMENDATIONS.

6.THE CONTRACTOR SHALL USE PROPER EROSION AND SEDIMENT CONTROL MEASURES TO ENSURE NO SEDIMENT IS TRACKED OFF-SITE (E.G. NHDOT STABILIZED CONSTRUCTION ENTRANCE).

7.DISTURBED AREAS WITH POTENTIAL TO DISCHARGE SEDIMENT-LADEN WATER INTO SURFACE WATERS OR OFF THE SITE MUST BE PROTECTED WITH TEMPORARY EROSION CONTROL MEASURES (E.G., SILT FENCE).

8.AREAS TO BE FILLED SHALL BE CLEARED GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS.

9.EXCAVATED TOPSOIL GRADE MATERIAL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED TEMPORARILY IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING (WITHIN PROPOSED CONSTRUCTION LIMITS) AND USED IN CONJUNCTION WITH SEEDING AND PLANTING THE PROJECT AREA.

10.ALL STOCKPILES, BORROW AREAS, AND SPOILS SHALL BE PROTECTED FROM EROSION AND SURROUNDED BY SILT FENCE AND STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES" AS SPECIFIED ON THESE DRAWINGS OR IN THE NH STORMWATER MANAGEMENT MANUAL, VOLUME 3: CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROL (DECEMBER 2008).

11.SLOPES SHALL NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGES.

12.FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTENTIAL ACCELERATED EROSION. WORK IN THESE MATERIALS TO BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

13.REPAIR OR REPLACEMENT OF EROSION CONTROL MEASURES SHALL BE MADE PROMPTLY AS NEEDED, AND AS DESCRIBED IN THE INSPECTION, MONITORING AND MAINTENANCE NOTES ON THESE DRAWINGS.

14.THE OUTER FACE OF THE FILL SLOPE SHALL BE ALLOWED TO STAY LOOSE, NOT ROLLED, COMPACTED,OR BLADED SMOOTH,ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION, AND FACILITATE VEGETATION ESTABLISHMENT. SEE "SURFACE ROUGHENING" SPECIFICATIONS ON THESE DRAWINGS OR NH STORMWATER MANAGEMENT MANUAL, VOLUME 3: CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROL (DECEMBER 2008).

15.USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE, TO REDUCE THE LENGTH OF CUT-AND-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES TO BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.

16.AREAS SHALL BE SACRIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL TO BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.

17.SEE TEMPORARY EROSION BLANKET SPECIFICATIONS ON THESE DRAWINGS OR IN THE NH STORMWATER MANAGEMENT MANUAL, VOLUME 3: CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROL (DECEMBER 2008).

18.STABILIZE ALL GRADED AREAS WITH VEGETATION, CRUSHED STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETED OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED.

19.ALL GRADED AREAS TO BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

20.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, SEED SHOULD BE PLACED FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS (NOVEMBER THROUGH MARCH). SEE WINTER CONSTRUCTION NOTES. PLANT ANNUAL RYE GRASS PRIOR TO OCTOBER 15TH.

21.AFTER OCTOBER 15TH: WHERE MULCH IS USED, IT SHALL BE APPLIED AT TWICE THE RATE AS DURING REGULAR CONSTRUCTION SEASON TO PROVIDE ADDITIONAL PROTECTION. SNOW AND ICE SHALL BE REMOVED TO A THICKNESS LESS THAN ONE INCH BEFORE APPLYING MULCH (IF APPLICABLE) TO DISTURBED SOILS. WHERE FINISHED GRADE IS ACHIEVED, OR BEFORE FORECASTED THAW OR SPRING MELT, MULCH MUST BE SECURED WITH EROSION CONTROL NETTING, TRACKING, OR OTHER METHOD. DIVERSION SWALES OR DITCHES WITHOUT STABILIZED VEGETATION BY OCTOBER 15TH SHALL BE STABILIZED WITH RIPRAP OR EROSION CONTROL NETTING AS APPROVED BY OWNER OR OWNER’S DESIGNATED REPRESENTATIVE.

22.ONCE DISTURBED AREAS HAVE BEEN STABILIZED AND VEGETATION IS ESTABLISHED, ALL TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE SHALL BE REMOVED, AREAS DISTURBED BY REMOVAL OF THESE MEASURES SHALL BE IMMEDIATELY SEEDED ACCORDING TO SEEDING SPECIFICATIONS ON THESE DRAWINGS.

EROSION CONTROL NOTES (CONT'D):

23.AN AREA IS 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 RIP RAP OR A CERTIFIED COMPOST BLANKET) HAS BEEN INSTALLED. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

24.ALL AREAS OF EXPOSED OR DISTURBED SOIL TO BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT, OR AN INDEPENDENT MONITOR.

25.ALL AREAS OF EXPOSED OR DISTURBED SOIL TO BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS FOLLOWING FINAL GRADING.

26.ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH NH STORMWATER MANAGEMENT MANUAL, VOLUME 3: CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROL (DECEMBER 2008).

SOIL STOCKPILE PRACTICES:

PURPOSE

INCLUDE MEASURES TO LOCATE, MANAGE, AND PROTECT STOCKPILED EARTH MATERIALS, TO REDUCE OR ELIMINATE WIND AND WATER EROSION, AND PREVENT RESULTING AIR AND WATER POLLUTION FROM DISPLACED SEDIMENT.

CONDITIONS WHERE PRACTICE APPLIES

TOPSOIL, EXCAVATED MATERIALS, BORROW MATERIALS IMPORTED TO THE SITE, AND CONSTRUCTION AGGREGATES AND PAVING MATERIALS THAT ARE STOCKPILED ON THE SITE PRIOR TO USE IN THE CONSTRUCTION WORK.

PLANNING CONSIDERATIONS

1.TO BE SITED ON THE SITE IN COMPLIANCE WITH ALL PERMIT CONDITIONS GOVERNING SETBACKS FROM ADJACENT PROPERTY LINES AND WATER RESOURCES (INCLUDING WETLANDS).

2.SOIL AND EROSION CONTROL PRACTICES AT STOCKPILES SHOULD BE REGULARLY INSPECTED AND SHOULD BE ADJUSTED IMMEDIATELY TO RESPOND TO ONGOING CONSTRUCTION OPERATIONS, AS THE DELIVERY OF NEW MATERIALS OR THE REMOVAL OF MATERIALS FOR INCORPORATION INTO THE WORK MAY REQUIRE MODIFICATION AND UPDATING OF THE PROTECTIVE MEASURES TO KEEP THEM EFFECTIVE.

SPECIFICATIONS

1.GENERAL:

- * LOCATE A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES, AND INLETS.
- * PROTECT FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS, OR OTHER APPROVED PRACTICE.
- * TO BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THESE DRAWINGS OR IN THE NH STORMWATER MANAGEMENT MANUAL, VOLUME 3: CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROL (DECEMBER 2008), TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.
- * IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.
- * PLACE BAGGED MATERIALS ON PALLETS AND UNDER COVER.

2.PROTECTION OF INACTIVE STOCKPILES:

- * COVER WITH ANCHORED TARPS OR PROTECT WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND TEMPORARY PERIMETER SEDIMENT BARRIERS AT ALL TIMES.
- * CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND OTHER SIMILAR MATERIALS TO BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY ARE TO BE COVERED.

3.PROTECTION OF ACTIVE STOCKPILES:

- * SURROUND WITH TEMPORARY LINEAR SEDIMENT BARRIERS PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS TO BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER TO BE INSPECTED AT THE END OF EACH WORKING DAY.
- * WHEN A STORM EVENT IS PREDICTED, STOCKPILES TO BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

MAINTENANCE REQUIREMENTS

1.INSPECT ALL SOIL STOCKPILES IMMEDIATELY AFTER STORM EVENTS AND AT THE FREQUENCIES SPECIFIED IN THE PROJECT EROSION AND SEDIMENT CONTROL PLAN AND IN APPLICABLE PERMITS. AT A MINIMUM, INSPECT WEEKLY DURING WET WEATHER PERIODS TO VERIFY THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY.

2.REPAIR AND/OR REPLACE PERIMETER CONTROLS AND STOCKPILE COVERINGS AS NEEDED TO KEEP THEM FUNCTIONING PROPERLY.

TEMPORARY EROSION CONTROL BLANKET:

GENERAL DESCRIPTION

INSTALLED ON PREPARED SOIL SURFACES TO PROVIDE EROSION PROTECTION AND SURFACE STABILITY ON STEEP SLOPES, VEGETATED CHANNELS, OR SHORELINES DURING VEGETATION ESTABLISHMENT.

PURPOSE

1. EROSION CONTROL BLANKETS TEMPORARILY STABILIZE AND PROTECT DISTURBED SOIL FROM RAINDROP IMPACT AND SURFACE EROSION.

2. HELP INCREASE INFILTRATION, DECREASE COMPACTION AND SOIL CRUSTING, AND CONSERVE SOIL MOISTURE.

3. INCREASES THE GERMINATION RATES FOR GRASSES AND LEGUMES AND PROMOTE VEGETATION ESTABLISHMENT.

4. PROTECT SEEDS FROM PREDATORS AND REDUCE DESICCATION AND EVAPORATION BY INSULATING THE SOIL AND SEED ENVIRONMENT.

CONDITIONS WHERE PRACTICE APPLIES

CAN BE APPLIED TO STEEP SLOPES, VEGETATED WATERWAYS, AND OTHER AREAS SENSITIVE TO EROSION, TO SUPPLEMENT VEGETATION DURING INITIAL ESTABLISHMENT AND HELP PROVIDE FOR SAFE CONVEYANCE OF RUNOFF OVER THE PROTECTED SURFACE.

PLANNING CONSIDERATIONS

1. DURING THE GROWING SEASON (APRIL 15 – SEPTEMBER 15) USE MATS (OR MULCH AND NETTING) ON:

- * THE BASE OF GRASSED WATERWAYS
- * STEEP SLOPES (15% OR GREATER)
- * ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS AND WETLANDS

2. DURING THE LATE FALL AND WINTER (SEPTEMBER 15 – APRIL 15) USE HEAVY GRADE MATS ON ALL AREAS NOTED ABOVE PLUS USE LIGHTER GRADE MATS (OR MULCH AND NETTING) ON:

- * SIDE SLOPES OF GRASSED WATERWAYS
- * MODERATE SLOPES (GREATER THAN 8%) THERE MAY BE CASES WHERE MATS WILL BE NEEDED ON SLOPES FLATTER THAN 8%, DEPENDING ON SITE CONDITIONS AND THE LENGTH OF THE SLOPE.

3. THE MOST CRITICAL ASPECT OF INSTALLING MATS IS OBTAINING FIRM CONTINUOUS CONTACT BETWEEN THE MAT AND THE SOIL. WITHOUT SUCH CONTACT, THE MAT IS USELESS AND EROSION OCCURS.

4. INSTALL MATS AND STAPLE IN ACCORDANCE WITH THE MANUFACTURER’S RECOMMENDATIONS.

SPECIFICATIONS

1. SITE PREPARATION:

PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL.

- * GRADE AND SHAPE AREA OF INSTALLATION.
- * REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL.
- * PREPARE SEEDBED BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
- * INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN (IF PROVIDED).

2. SEEDING:

- * SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND RE-VEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATION. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDED.
- * WHERE SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO FILLING THE MAT WITH SOIL.

3. INSTALLING AND ANCHORING BLANKETS

- * BLANKETS SHALL BE PLACED WITHIN 24 HOURS AFTER SOWING SEED IN THAT AREA.
- * EROSION CONTROL BLANKETS MUST BE 100% BIODEGRADABLE (PLASTIC NETTING WILL NOT BE ALLOWED).
- * BLANKETS SHALL BE INSTALLED AND ANCHORED PER THE MANUFACTURER’S SPECIFICATIONS. IF THE MANUFACTURER DOES NOT PROVIDE INSTRUCTIONS, FOLLOW THOSE CONTAINED WITHIN THE NH STORMWATER MANAGEMENT MANUAL VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS (DECEMBER 2008).
- * EROSION CONTROL BLANKET SHALL BE INSTALLED AND SECURED WITH BIOSTAKES (OR AN EQUIVALENT APPROVED BY THE ENGINEER) IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL BLANKET IS ADEQUATELY SECURED TO FINISHED GRADE SURFACE.
- * U-SHAPED WIRE STAPLES, METAL GEOTEXTILE STAKE PINS, OR TRIANGULAR WOODEN STAKES CAN BE USED TO ANCHOR MATS TO THE GROUND SURFACE ONLY IF BIOSTAKES DO NOT PROVIDE APPROPRIATE ANCHORING AND ENGINEER’S APPROVAL IS OBTAINED.
- * STAPLES AND STAKES SHOULD BE DRIVEN FLUSH TO THE SOIL SURFACE. ALL ANCHORS SHOULD HAVE SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. LONGER ANCHORS MAY BE REQUIRED FOR LOOSE SOILS.

MAINTENANCE REQUIREMENTS

1. ALL BLANKET AND MATS SHOULD BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EVENT EXCEEDING 1 INCH IN A 24-HOUR PERIOD.

2. ANY FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEDED, AND THE AFFECTED AREA OF MAT SHALL BE RE-INSTALLED OR REPLACED.

WINTER CONSTRUCTION NOTES:

FOR SITE WORK CONSTRUCTION BETWEEN OCTOBER 15TH AND EARLY APRIL THE CONTRACTOR SHALL FOLLOW WINTER CONSTRUCTION EROSION PROTECTION METHODS AS DESCRIBED BELOW:

1.CHECK ALL PERIMETER EROSION CONTROL MEASURES AND COMPLETE ANY REQUIRED MAINTENANCE AND REPAIR BEFORE THE GROUND FREEZES.

2.PUT IN PLACE ANY ADDITIONALLY NECESSARY EROSION CONTROL MEASURES: DIVERSION DIKES, HAY BALES, SILT FENCE, SEDIMENT TRAPS AND/OR BASINS, ETC. TO PROTECT DOWNSTREAM WATER QUALITY FROM ANTICIPATED WINTER WORK PRIOR TO GROUND FREEZING.

CITY OF LEBANON, NEW HAMPSHIRE			
EROSION CONTROL NOTES			
DON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
EPSC Notes	13558A	107	167

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SDR PROCESSED

NEW DESIGN

SHEET CHECKED

AS BUILT DETAILS

DATE

DATE

DATE

DATE

12/17/2024

12/17/2024

NUMBER

DATE

STATION

STATION

DESCRIPTION

REVISIONS AFTER PROPOSAL

WINTER CONSTRUCTION NOTES (CONT'D):

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 THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH OR THAT ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

5.AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON, BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

6.INSPECT THE EROSION AND SEDIMENT CONTROL MEASURES MORE FREQUENTLY THAN IS SPECIFIED IN THE EROSION CONTROL INSPECTION, MONITORING, AND MAINTENANCE SPECIFICATIONS FOUND ON THIS SHEET DURING THE WINTER AND SPRING THAW MONTHS TO PREVENT FAILURE AND/OR OVERLOADING.

7.BEFORE PREDICTED THAWS AND/OR HEAVY RAIN EVENTS CHECK ALL MEASURES TO ENSURE THAT THEY WILL BE ABLE TO HANDLE POTENTIALLY HEAVY AND INTENSE RUNOFF AND SEDIMENTATION.

8.CONTRACTOR SHALL BE PREPARED TO INSTALL A SECOND LINE OF DEFENSE IF PROBLEMS WITH IN-PLACE EROSION CONTROL MEASURES OCCUR DURING WINTER THAW AND SPRING RAIN EVENTS.

9.AS EARLY AS PRACTICAL AT THE BEGINNING OF THE NEXT GROWING SEASON, CONTRACTOR SHALL STABILIZE COMPLETED AREAS WITH PERMANENT VEGETATIVE CONTROLS AS SPECIFIED ON THESE DRAWINGS.

GENERAL SEEDING FOR LONG TERM COVER SPECIFICATIONS:

REFERENCE: STORMWATER MANAGEMENT AND EROSION SEDIMENT CONTROL HANDBOOK FOR URBAN DEVELOPING AREAS IN NEW HAMPSHIRE (AUGUST 1992)

DEFINITION

ESTABLISHING GRASSES AND LEGUMES ON HIGHLY ERODIBLE SOILS OR CRITICALLY ERODING AREAS.

PURPOSE

1.TO STABILIZE SOIL.

2.TO REDUCE DAMAGE FROM SEDIMENT.

3.TO MAINTAIN OR IMPROVE WATER QUALITY.

4.TO REDUCE STORMWATER RUNOFF.

CONDITIONS WHERE PRACTICE APPLIES

ON ALL AREAS WHERE PERMANENT VEGETATIVE COVER IS NEEDED TO ACCOMPLISH ONE OR MORE OF THE ABOVE PURPOSES.

PLANNING CONSIDERATIONS

1.IT IS IMPORTANT TO SELECT THE PROPER SEED MIXTURE FOR THE INTENDED USE OF THE AREA, THE SOIL CONDITIONS ON THE SITE, AND THE CLIMATE.

2.WARM SEASON GRASSES SHOULD BE CONSIDERED FOR SANDY AND DROUGHTY SITES SUCH AS ROADSIDES AND SAND PITS.

SEEDING RECOMMENDATIONS

1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1 3:1 SLOPES OR FLATTER ARE PREFERRED, WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

2. SEEDBED PREPARATION

A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.

B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA, WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME IN TO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

3. ESTABLISHING A STAND

A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED: AGRICULTURE LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ. FT. NITROGEN (N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ. FT. PHOSPHATE (P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT. POTASH (K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT. (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRES OF 5-10-10.)

B. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF A SURFACE WATER BODY.

C. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH 0.25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

D. REFER TO TABLE 7-35 FOR APPROPRIATE SEED MIXTURES AND TABLE 7-36 FOR RATES OF SEEDING. ALL LEGUMES (CROWN VETCH, BIRDFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT.

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE 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 10 TO SEPTEMBER 1.

4.MULCH

HAY OR STRAW

1.5 TO 2 TONS PER ACRE. 70 TO 90 LBS. PER 1,000 SQ. FT. CAN BE SPREAD BY HAND OR BY MACHINE. MUST BE DRY AND FREE OF MOLD. MAY BE USED WITH PLANTINGS OR FOR EROSION CONTROL ALONE. SUBJECT TO BLOWING AND SLIPPING ON STEEP SLOPES UNLESS ANCHORED.

5.MAINTENANCE TO ESTABLISH A STAND

A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. FERTILIZATION NEED SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.

C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION

SEEDING FOR TEMPORARY PROTECTION OF DISTURBED AREAS

SPECIFICATIONS:

REFERENCE: STORMWATER MANAGEMENT AND EROSION SEDIMENT CONTROL HANDBOOK FOR URBAN DEVELOPING AREAS IN NEW HAMPSHIRE (AUGUST 1992)

DEFINITION

SEEDING OF GRASS OR SMALL GRAIN SUCH AS RYE, OATS, OR RYEGRASS ON A DISTURBED AREA TO PROVIDE PROTECTION FOR A LIMITED PERIOD OF TIME, USUALLY NOT MORE THAN ONE YEAR.

PURPOSE

1.TO PROVIDE TEMPORARY PROTECTION AGAINST WIND OR WATER EROSION.

2.TO IMPROVE WATER QUALITY BY REDUCING SEDIMENTATION OF SURFACE WATERS.

3.TO FURTHER REDUCE DAMAGE FORM SEDIMENT AND RUNOFF TO DOWNSTREAM AREAS.

PLANNING CONSIDERATIONS

1. PREVENTING EROSION IS ALWAYS PREFERRED OVER SEDIMENT CONTROL. WHEN A DISTURBED AREA WILL BE INACTIVE FOR A PROLONGED PERIOD OF TIME, EROSION CONTROL MEASURES SHOULD BE USED.

2. TEMPORARY SEEDING IS ONLY EFFECTIVE FOR EROSION CONTROL WHILE THE VEGETATION IS ESTABLISHED. ANNUAL PLANTS THAT SPROUT QUICKLY AND GROW FOR ONLY ONE YEAR ARE USED FOR THIS PRACTICE.

3. ADEQUATE SEEDBED PREPARATION, USE OF QUALITY SEED, AND TIMELY PLANTING ARE REQUIRED TO ACHIEVE A GOOD STAND OF VEGETATION TO CONTROL EROSION.

SEEDING RECOMMENDATIONS

1. GRADING AND TEMPORARY STRUCTURE

ALL ESSENTIAL GRADING AND ALL TEMPORARY STRUCTURES, SUCH AS DIVERSIONS DAMS, DITCHES, AND DRAINS NEEDED TO PREVENT GULLYING AND REDUCE SILTATION SHOULD BE COMPLETED PRIOR TO SEEDING.

2. SEEDBED PREPARATION

REMOVE STONES AND TRASH THAT WILL INTERFERE WITH SEEDING THE AREA. WHERE FEASIBLE, TILL THE SOIL TO A DEPTH OF ABOUT 3 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

3. FERTILIZERS

SHOULD BE UNIFORMLY SPREAD OVER THE AREA PRIOR TO BEING INCORPORATED INTO THE SOIL. A MINIMUM OF 300 POUNDS PER ACRE (7 POUNDS PER 1,000 SQUARE FEET) OF 10-10-10 FERTILIZER, OR ITS EQUIVALENT, SHOULD BE APPLIED.

FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF A SURFACE WATER BODY.

4. SEED AND SEEDING

SEED AND SEEDING RATES MAY BE SELECTED FROM THE TABLE BELOW. THE SELECTION WILL BE BASED ON THE TIME OF YEAR OF THE SEEDING IS TO BE MADE AND THE LENGTH OF TIME THE VEGETATION IS TO AFFORD THE PROTECTION. THE SEED SHOULD BE SPREAD UNIFORMLY OVER THE AREA. AFTER SEEDING, THE SOIL SHOULD BE FIRMED BY ROLLING OR PACKING. WHERE ROLLING OR PACKING IS NOT FEASIBLE, THE SEED SHOULD BE COVERED LIGHTLY BY RAKING, DISKING, OR DRAGGING.

5. MULCHING

WHERE IT IS IMPRACTICABLE TO INCORPORATE FERTILIZER AND SEED INTO MOIST SOIL, THE SEEDED AREA SHOULD BE MULCHED TO FACILITATE GERMINATION.

6. PLANT SELECTION AND SEEDING RATES

SPECIES	PER ACRE	PER 1000 SF	
WINTER RYE	2 BU. OR 120 LBS	2.5 LBS	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 5 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	2.5 BU. OR 80 LBS	2 LBS MAY 15	BEST FOR SPRING SEEDINGS. SEED NO LATER THAN FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40 LBS	1 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEE EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.

TABLE 7-35 -- SEEDING GUIDE

USE	SEEDING MIXTURE 1/	DROUGHTY	SOIL DRAINAGE		
			WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS.	A	FAIR	GOOD	GOOD	FAIR
BORROW AND DISPOSAL AREAS	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR

(TOPSOIL IS ESSENTIAL FOR GOOD TURF.)

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE 7-36

TABLE 7-36 -- SEEDING MIXTURES AND RATES

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A.TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B.TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH OR FLATPEA	15	0.35
TOTAL	30	0.75
	40 OR 55	0.95 OR 1.35
C.TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.1
D.BIRDSFOOT TREFOIL	20	0.25
READTOP	10	0.10
TOTAL	30	0.70
E.TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL	50	1.20

MAINTENANCE

1. IF THE SEEDING FAILS TO GROW, IT MAY NEED TO BE RE-ESTABLISHED TO PROVIDE ADEQUATE EROSION CONTROL.

2. IF WEEDS BECOME A PROBLEM, THEY MAY NEED TO BE CONTROLLED BY MOWING.

EROSION CONTROL INSPECTION MONITORING, AND MAINTENANCE:

1. AT LEAST ONCE EVERY 7 CALENDAR DAYS AND DURING OR WITHIN 24 HOURS OF ANY RAIN EVENT IN WHICH 1/2 INCH OF PRECIPITATION OR MORE FALLS WITHIN A 24-HOUR PERIOD. THE CONTRACTOR SHALL HAVE QUALIFIED PERSONNEL INSPECT ALL CLEARED AND GRADED AREAS OF THE CONSTRUCTION SITE AND ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.

2. THIS INSPECTION WILL VERIFY THAT ALL EROSION CONTROL DEVICES ARE IN GOOD AND WORKING CONDITION. DISCHARGE LOCATIONS WILL BE INSPECTED TO VERIFY THAT SEDIMENTS ARE NOT ENTERING THE DRAINAGE SYSTEM AND ARE NOT EXITING THE PROJECT SITE. VEHICLE ACCESS LOCATIONS WILL BE INSPECTED FOR EVIDENCE OF SEDIMENT TRACKING INTO THE PUBLIC RIGHT-OF-WAY.

3. ANY OBSERVED ACCUMULATION OF SEDIMENT OFF THE SITE WILL BE IMMEDIATELY REMOVED AND THE AREA RESTORED TO PRE-CONSTRUCTION CONDITIONS.

4. THE CONTRACTOR SHALL MAINTAIN INSPECTION AND REPAIR REPORTS OF EROSION AND SEDIMENT CONTROL MONITORING AND THESE SHALL BE KEPT AT THE PROJECT SITE DURING CONSTRUCTION. THE REPORTS SHALL INCLUDE THE FOLLOWING:

* THE INSPECTION DATE;

* NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION;

* WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION;

* LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE;

* LOCATION(S) OF BMPS THAT NEED TO BE MAINTAINED;

* LOCATION(S) OF BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION;

* LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION; AND

* CORRECTIVE ACTION REQUIRED INCLUDING IMPLEMENTATION DATES

5.TEMPORARY MEASURES

INSPECTION SHALL VERIFY THAT ANY TEMPORARY MEASURES BEING USED BY THE CONTRACTOR ARE CONSTRUCTED AND OPERATING IN ACCORDANCE WITH APPROVED STANDARDS AND SPECIFICATIONS. MEASURES SHALL BE REPAIRED AND ACCUMULATION OF SEDIMENTS SHALL BE CLEAN.

DuBois & King

CITY OF LEBANON, NEW HAMPSHIRE

EROSION CONTROL NOTES

DGN

STATE PROJECT NO.

SHEET NO.

TOTAL SHEETS

EPSC Notes

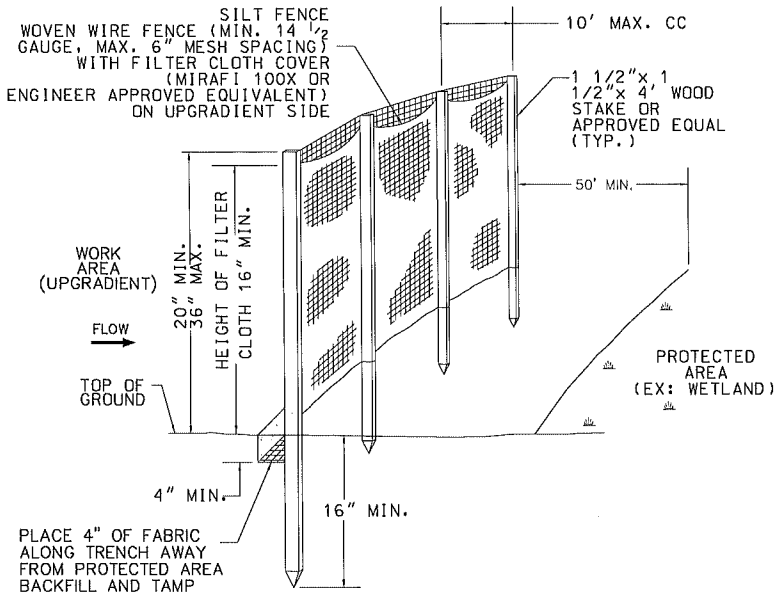
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REVISIONS AFTER PROPOSAL		STATION		STATION		STATION		STATION		STATION	
DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION
12/17/2024	NEW DESIGN	12/17/2024	NEW DESIGN	12/17/2024	NEW DESIGN	12/17/2024	NEW DESIGN	12/17/2024	NEW DESIGN	12/17/2024	NEW DESIGN
12/17/2024	SHEET CHECKED	12/17/2024	SHEET CHECKED	12/17/2024	SHEET CHECKED	12/17/2024	SHEET CHECKED	12/17/2024	SHEET CHECKED	12/17/2024	SHEET CHECKED
12/17/2024	ENGINEER	12/17/2024	ENGINEER	12/17/2024	ENGINEER	12/17/2024	ENGINEER	12/17/2024	ENGINEER	12/17/2024	ENGINEER
12/17/2024	AS BUILT DETAILS	12/17/2024	AS BUILT DETAILS	12/17/2024	AS BUILT DETAILS	12/17/2024	AS BUILT DETAILS	12/17/2024	AS BUILT DETAILS	12/17/2024	AS BUILT DETAILS



SILT FENCE

GENERAL DESCRIPTION

TEMPORARY SEDIMENT BARRIER CONSISTING OF FILTER FABRIC ATTACHED TO SUPPORTING POSTS AND ENTRENCHED IN SOIL. INSTALLED ACROSS OR AT THE TOE OF A SLOPE PERPENDICULAR TO RUNOFF (EXCEPT FOR ENDS FLARING UPSLOPE) TO INTERCEPT AND RETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED OR UNPROTECTED AREAS.

PURPOSE

- FUNCTIONS PRIMARILY TO SLOW AND POND WATER AND ALLOW SOIL PARTICLES TO SETTLE. USE LIMITED TO AREAS WHERE OVERLAND SHEET FLOWS ARE EXPECTED. DO NOT USE ACROSS STREAMS, CHANNELS, SWALES, DITCHES OR OTHER DRAINAGE WAYS.
- IS A SEDIMENT CONTROL PRACTICE, NOT AN EROSION CONTROL PRACTICE. INTENDED TO BE USED IN CONJUNCTION WITH OTHER PRACTICES THAT DO PREVENT OR CONTROL EROSION.

CONSIDERATIONS

SILT FENCE USED WHERE:

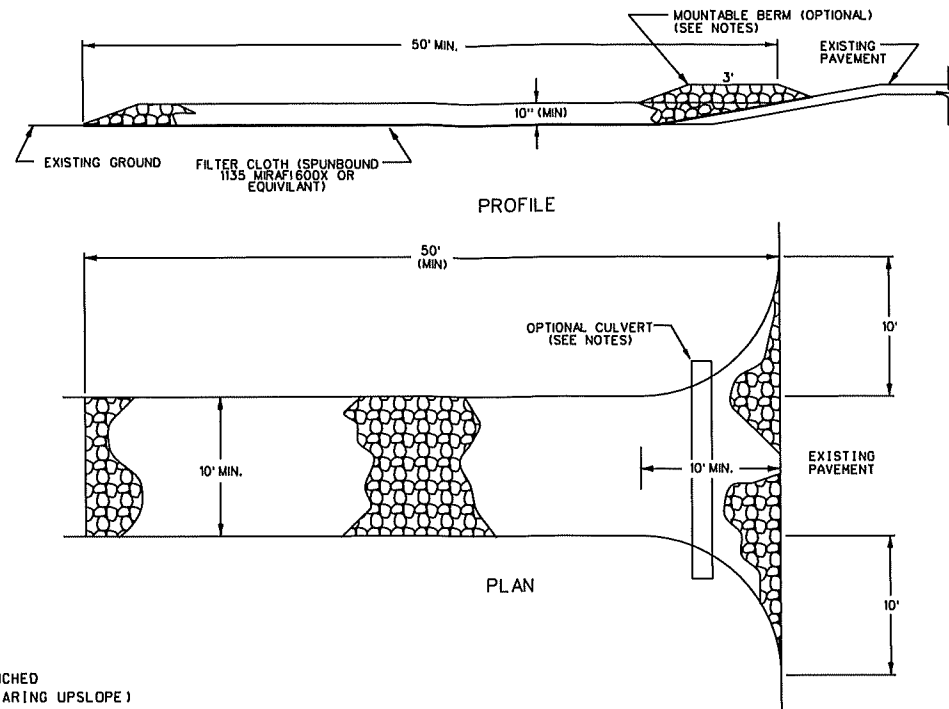
- MAXIMUM LENGTH OF SLOPE ABOVE THE BARRIER IS 100 FEET; AND
- MAXIMUM GRADIENT ABOVE THE BARRIER IS 50 PERCENT (2:1); AND
- CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/4 ACRE PER 100 FEET OF BARRIER LENGTH; AND
- IF ANY OF THESE CONDITIONS ARE EXCEEDED, OTHER MEASURES MAY BE NECESSARY

SPECIFICATIONS

- INSTALL PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
- INSTALL FOLLOWING CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE.
- SET SILT FENCES PLACED AT THE TOE OF A SLOPE AT LEAST 6 FEET FROM THE TOE TO ALLOW SPACE FOR SHALLOW PONDING AND MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE.
- EMBED FABRIC A MINIMUM OF 4 INCHES IN DEPTH AND 4 INCHES IN WIDTH IN TRENCH EXCAVATED INTO THE GROUND ALONG THE LINE OF POSTS AND UPGRADE FROM BARRIER. IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, EMBED BASE OF FABRIC WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE.
- BACKFILL TRENCH AND COMPACT SOIL OVER THE FILTER FABRIC.
- SIZE AND ANCHOR SUPPORT POSTS ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WITH MAXIMUM POST SPACING OF 10 FEET.
- FILTER FABRIC TO BE A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, SPLICE FILTER CLOTH TOGETHER ONLY AT SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP (24 INCHES PREFERRED), AND STAPLE TO SUPPORT POST. IF METAL POSTS USED, WIRE-TIE FABRIC DIRECTLY TO THE POSTS WITH THREE DIAGONAL TIES.
- SILT FENCING NOT TO BE STAPLED OR NAILED TO TREES.
- FILTER FABRIC TO BE PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND CERTIFIED BY THE MANUFACTURER OR SUPPLIER.
- FILTER FABRIC TO CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES FAHRENHEIT TO 120 DEGREES FAHRENHEIT.
- POSTS FOR SILT FENCES TO BE EITHER 4-INCH DIAMETER WOOD OR 1.33 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS TO HAVE PROJECTIONS FOR FASTENING WIRE TO THEM. POSTS TO BE PLACED ON THE DOWNSLOPE SIDE OF THE FABRIC.
- HEIGHT OF A SILT FENCE NOT TO EXTEND MORE THAN 36 INCHES ABOVE ORIGINAL GROUND SURFACE
- MANUFACTURED SILT FENCE SYSTEM WITH INTEGRAL POSTS MAY BE USED.
- SILT FENCES TO BE INSTALLED WITH "SMILES" OR "J-HOOKS" TO REDUCE THE DRAINAGE AREA THAT ANY SEGMENT WILL IMPOUND. FLARE ENDS OF FENCE UPSLOPE.

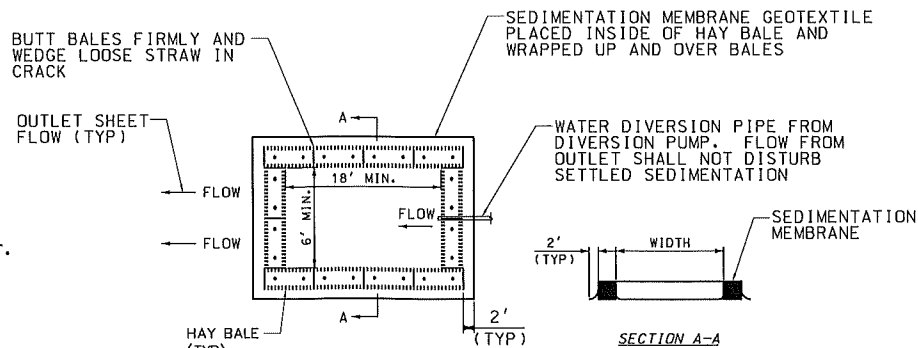
MAINTENANCE AND REMOVAL REQUIREMENTS

- INSPECT AND MAINTAIN IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- REMOVE SEDIMENT DEPOSITION, AT A MINIMUM, WHEN DEPOSITION ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FENCE, AND MOVE SO SEDIMENT NOT READILY TRANSPORTED BACK TOWARD THE SILT FENCE.
- REPAIR SILT FENCE IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS TO BE REPLACED WITH A TEMPORARY CHECK DAM.
- IF SILT FENCE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, REPLACE FABRIC PROMPTLY.
- DRESS REMAINING SEDIMENT DEPOSITS AFTER SILT FENCE IS NO LONGER REQUIRED TO CONFORM TO THE EXISTING GRADE, PREPARE, AND SEED.
- IF EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
- SILT FENCES HAVE USEFUL LIFE OF ONE SEASON, ON LONGER CONSTRUCTION PROJECTS, SILT FENCE TO BE REPLACED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.
- REMOVE AFTER CONSTRUCTION IS COMPLETED AND ALL AREAS ARE STABILIZED.



USDA - SCS STABILIZED CONSTRUCTION ENTRANCE (TYP.)

- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- SURFACE 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
- 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.
- 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.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
- ALL COSTS FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF STABILIZED CONSTRUCTION ENTRANCE SHALL BE INCIDENTAL TO ITEM 692, MOBILIZATION.



TEMPORARY SEDIMENTATION BASIN DETAIL

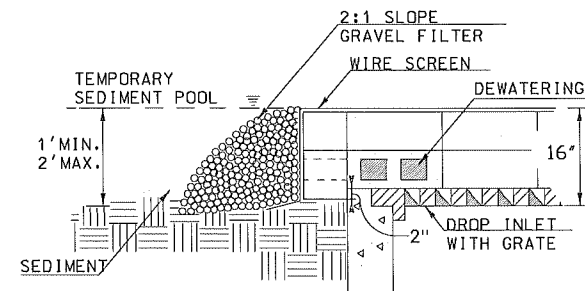
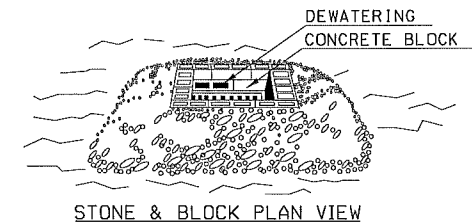
NOTES:

- THE BALES SHALL BE WIRE OR NYLON TIED, TO PRESERVE THE BINDINGS AS LONG AS POSSIBLE, THE BALES SHOULD BE INSTALLED WITH THE BINDINGS LOCATED AROUND THE SIDES OF THE BALE RATHER THAN ALONG THE TOP AND BOTTOM OF BALE.
- DIMENSIONS OF SEDIMENTATION BASIN SHALL BE FIELD DETERMINED TO ENSURE THAT OUTLET FLOW IS CLEAN OF SEDIMENT. LENGTHEN SEDIMENTATION BASIN AS NECESSARY TO ENSURE CLEAR OUTFLOW. OUTFLOW OF SEDIMENTATION BASIN SHALL BE LOCATED OPPOSITE FROM INFLOW OF DIVERSION PIPE.
- INLET DIVERSION PIPE SHALL NOT BE LOCATED ALONG THE BOTTOM OF BASIN TO PREVENT DISTURBANCE OF SETTLED SEDIMENTATION.
- COLLECTED SEDIMENT SHALL BE REMOVED ONCE ACCUMULATION HAS BEEN RECORDED TO A MAXIMUM DEPTH OF 4-INCHES.

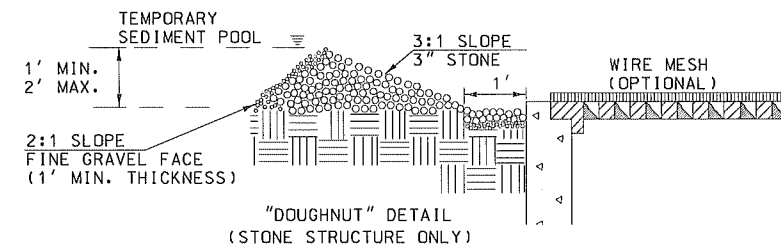
RECOMMENDED CONTROL OF WATER SEQUENCING

BELOW IS A RECOMMENDED SEQUENCED CONTROL OF WATER OPERATIONS AND SHALL GENERALLY BE FOLLOWED. PROPOSED CHANGES TO THIS PLAN MUST RECEIVE PRIOR APPROVAL BY THE NHDES AND THE ENGINEER. COST FOR CONTROL OF WATER OPERATIONS SHALL BE INCLUDED UNDER ITEM 503.201, COFFERDAMS.

- INSTALL COFFERDAM, CHANNELING RIVER FLOW TO THE FAR SIDE OF INTENDED EXCAVATION AREA, ENABLING WORK TO BE PERFORMED IN THE DRY.
- EXCAVATE MATERIAL TO THE SPECIFIED LIMITS SHOWN ON THE PLANS.
- PUMPING MAY BE REQUIRED TO MAINTAIN A DRY WORK AREA. INSTALL TEMPORARY SUPPORTS AS NECESSARY, AS THE AREA IS EXCAVATED.
- CONSTRUCT NEW ABUTMENTS AS SPECIFIED. BACKFILL EXCAVATION AND PLACE RIPRAP.
- RELOCATE COFFERDAM TO CHANNEL RIVER FLOW TO THE SIDE OF COMPLETED CONSTRUCTION, CREATING DRY CONDITIONS ON THE OPPOSITE SIDE OF RIVER.
- EXCAVATE MATERIAL TO THE SPECIFIED LIMITS SHOWN ON THE PLANS.
- PUMPING MAY BE REQUIRED TO MAINTAIN A DRY WORK AREA. INSTALL TEMPORARY SUPPORTS AS NECESSARY, AS THE AREA IS EXCAVATED.
- CONSTRUCT NEW ABUTMENT AS SPECIFIED. BACKFILL EXCAVATION AND PLACE RIPRAP.
- REMOVE COFFERDAM AND RESTORE WATERWAY CONDITIONS ACCORDING TO THE PLAN PROVIDED.



STONE & BLOCK DETAIL



STONE & BLOCK DROP INLET PROTECTION

CONSTRUCTION SPECIFICATIONS

- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2" MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
- HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
- USE CLEAN STONE OR GRAVEL 1/2"- 3/4" IN DIAMETER PLACED 2" BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
- FOR STONE STRUCTURES ONLY, A 1' THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3" STONE AS SHOWN ON THE DRAWINGS.
- MAXIMUM DRAINAGE AREA 1 ACRE

TOWN OF HILLSBOROUGH, NEW HAMPSHIRE

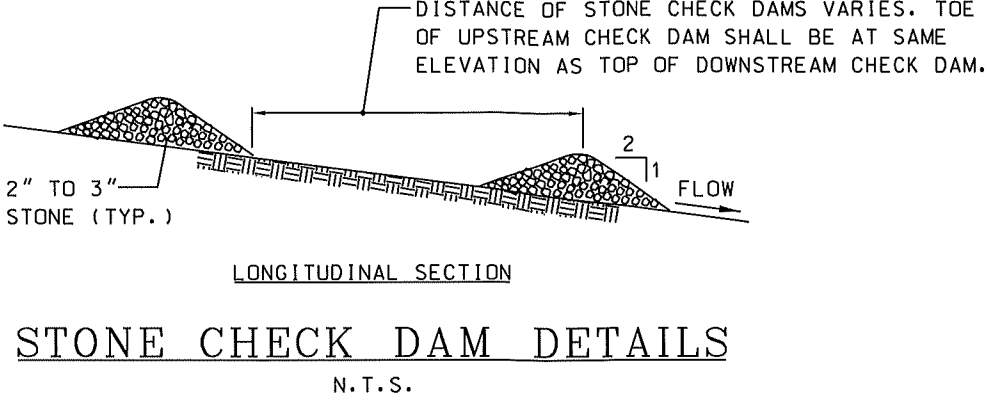
EROSION CONTROL DETAILS 1

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A ecdetails	13558A	109	167

D&K NO. 324277

Dubois & King

SR PROCESSED		REVISIONS AFTER PROPOSAL			
		NUMBER	DATE	STATION	DESCRIPTION
NEW DESIGN	CEB		DATE		
SHEET CHECKED	CWB		DATE		
AS BUILT DETAILS			DATE		



D&K NO. 324277

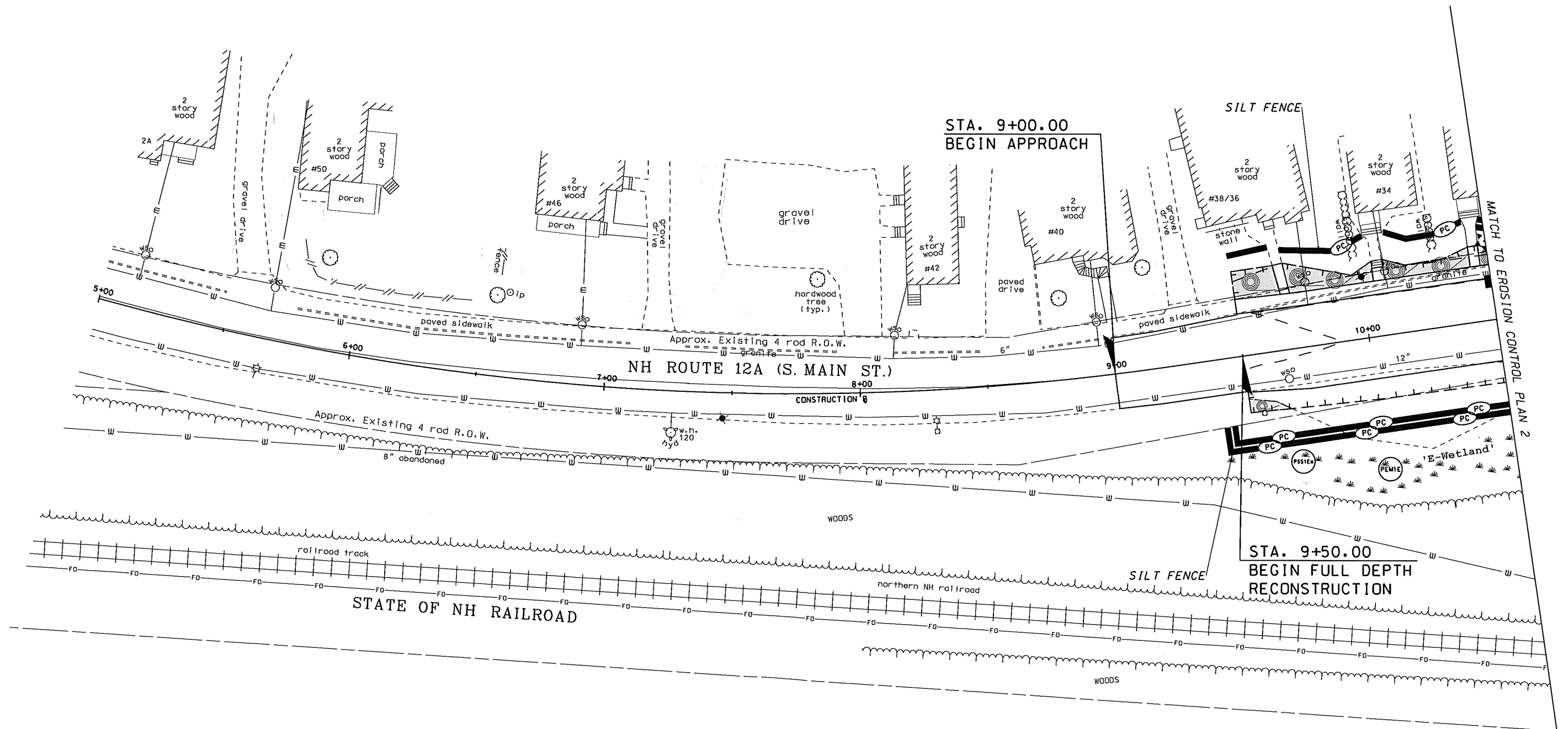


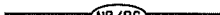
TOWN OF HILLSBOROUGH, NEW HAMPSHIRE			
EROSION CONTROL DETAILS 2			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13558A ecdetails	13558A	110	167

SOR PROCESSED		DATE	REVISIONS AFTER PROPOSAL			
NEW DESIGN	GMC	DATE 12/17/2024	NUMBER	DATE	STATION	DESCRIPTION
SHEET CHECKED	RLT	DATE 12/17/2024				
AS BUILT DETAILS		DATE				

TEMPORARY SLOPE MATTING TYPE D (WILDLIFE FRIENDLY)
STA. 9+50 - STA. 9+63 RT
STA. 9+50 - STA. 10+50 LT

SILT FENCE
STA. 9+40 - STA. 10+50 RT(2)
STA. 9+49 - STA. 10+48 LT
STA. 9+47 - STA. 10+50 LT
STA. 9+48 - STA. 10+50 LT(2)



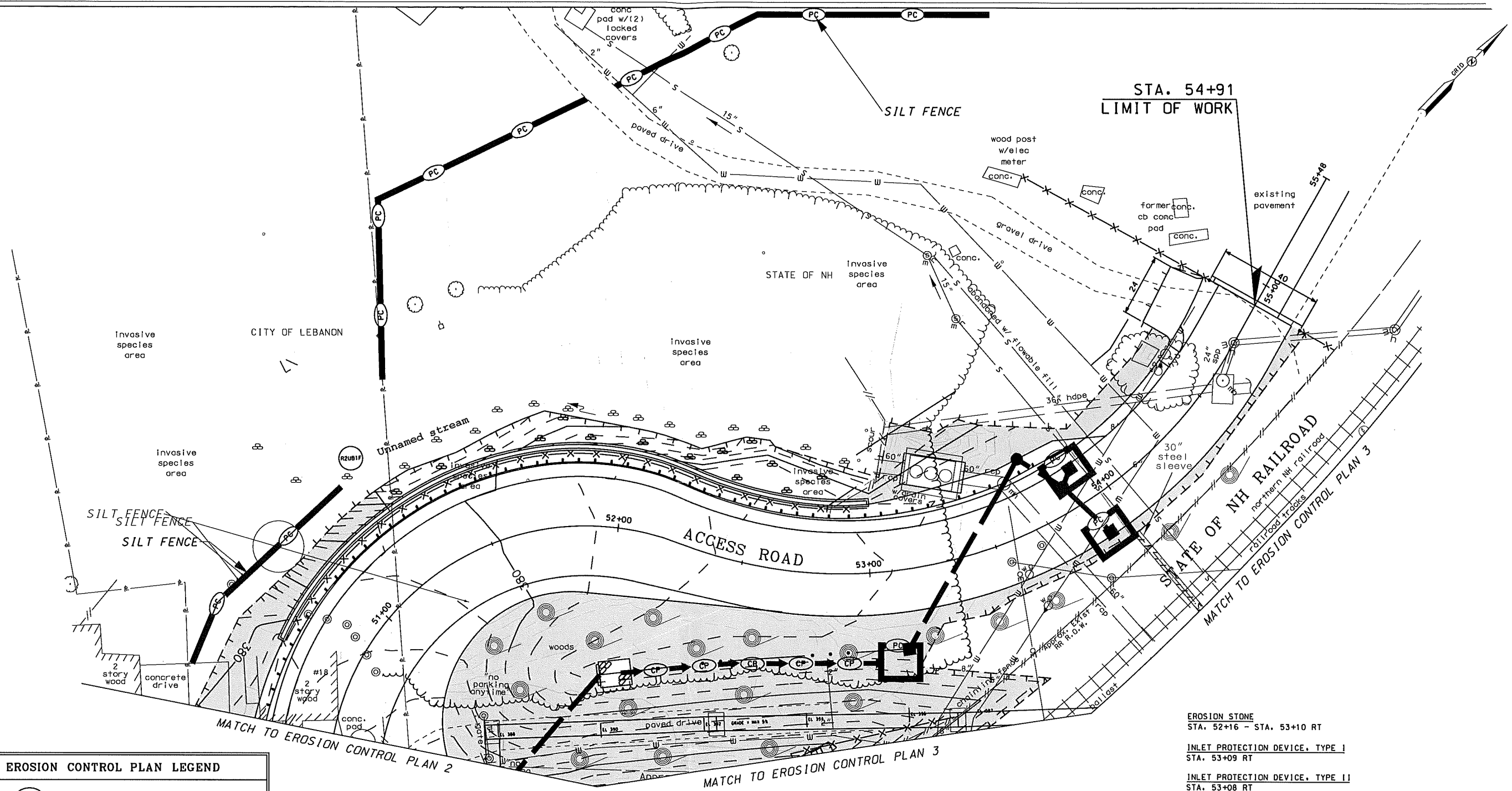
EROSION CONTROL PLAN LEGEND	
	<u>PERIMETER CONTROL</u> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<u>NATURAL BUFFER/PERIMETER CONTROL</u> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM

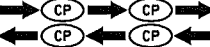
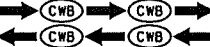
EROSION CONTROL PLAN LEGEND	
	<u>CHANNEL PROTECTION</u> STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
	<u>CLEAN WATER BYPASS</u> PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL

EROSION CONTROL PLAN LEGEND	
	FILTER FABRIC DROP INLET PROTECTION
	TEMPORARY SLOPE MATTING TYPE B (WILDLIFE FRIENDLY) ITEM 645.42



CITY OF LEBANON, NEW HAMPSHIRE			
<i>EROSION CONTROL PLAN 1</i>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
eroplans	13558A	111	167

[illegible]

EROSION CONTROL PLAN LEGEND	
	<u>PERIMETER CONTROL</u> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<u>NATURAL BUFFER/PERIMETER CONTROL</u> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<u>CHANNEL PROTECTION</u> STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
	<u>CLEAN WATER BYPASS</u> PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL

EROSION CONTROL PLAN LEGEND	
	FILTER FABRIC DROP INLET PROTECTION
	TEMPORARY SLOPE MATTING TYPE B (WILDLIFE FRIENDLY) ITEM 645.42

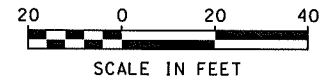
EROSION STONE
STA. 52+16 - STA. 53+10 RT

INLET PROTECTION DEVICE, TYPE I
STA. 53+09 RT

INLET PROTECTION DEVICE, TYPE II
STA. 53+08 RT
STA. 53+91 LT
STA. 53+91 RT

TEMPORARY SLOPE MATTING TYPE D (WILDLIFE FRIENDLY)
STA. 50+25 - STA. 54+91 RT

SILT FENCE
STA. 50+60 - STA. 51+18 LT
STA. 51+41 - STA. 55+39 LT
STA. 54+02 - STA. 54+94 RT



CITY OF LEBANON, NEW HAMPSHIRE			
<i>EROSION CONTROL PLAN 4</i>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
eroplans	13558A	114	167

Section 5

Natural Heritage Bureau Review



NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Lee Toomey
6 Green Tree Drive
South Burlington, VT 05403
ltoomey@dubois-king.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Maddie Severance - nhbreview@dncr.nh.gov

cc:

Date: 10/01/2024 (valid until 10/01/2025)

Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game

Permits: NHDES - Alteration of Terrain Permit, NHDES - Shoreland Standard Permit, USCEQ - Federal: NEPA Review

NHB ID: NHB24-2801

Town: Lebanon

Location: 0 Railroad Ave, Bridge 062/117 NH12A over NHRR

Project Description: This is a renewal of NHB File ID: NHB20-2021 and NHB22-0404 due to the expiration date passing. The City of Lebanon proposes to replace Bridge 062/117 carrying NH 12A over NHRR in Lebanon, NH.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: NHB recommends a survey for Virginia stickseed (*Hackelia virginiana*). NHB understands surveys have occurred for this project previously, however these surveys are several years old and the population may have expanded since then. There is a known record of this rare plant overlapping the proposed project area and it may be impacted by the proposed work. The survey should occur within any suitable habitat proposed to be impacted including forested areas, thickets, roadsides, and the edges of wooded areas, fields, and trails.

Surveys should occur when this plant is in fruit between mid-July and mid-September. Surveys should be performed by a qualified botanist (qualified botanist requirements found here: <https://www.nhdfi.dncr.nh.gov/sites/g/files/ehbemt866/files/inline-documents/botanist-qualifications.pdf>).

Please contact NHB with results when surveys are complete. If found please document plants with GPS, fill out a rare plant reporting form (<https://www.nhdfi.dncr.nh.gov/natural-heritage/environmental-reviews>), and provide diagnostic photos of the plants. If not found, please put together a brief survey report/memo that includes the date of the survey, name of surveyor, map and photos of survey area, and a list of the dominant species observed.



NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

Please contact NHB if you have any questions about survey recommendations.

NHFG Comments: No comments at this time.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to <https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review>. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.



NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB Database Records:

The following record(s) have been documented in the vicinity of the proposed project.

Please see the map and detailed information about the record(s) on the following pages.

Plant species	State ¹	Federal	Notes
Virginia stickseed (<i>Hackelia virginiana</i>)	T	--	This species is found in moist or dry woods, including floodplain forests. Threats would primarily be major alterations to their habitat.

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.

An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.

However, many areas have never been surveyed, or have only been surveyed for certain species.

NHB recommends surveys to determine what species/natural communities are present onsite.



NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-2801



NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-2801

EOCODE:

PDBOR0G0U0*026*NH

New Hampshire Natural Heritage Bureau - Plant Record

Virginia stickseed (*Hackelia virginiana*)

Legal Status

Federal: Not listed

State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure

State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked

Comments on Rank: --

Detailed Description: 2011: Area 1: 29 plants observed. Area 2: 214 plants spread among 10 clumps. Overall 70% with mature fruit and a total of 256 plants counted.

General Area: 2011: Associated plants include sugar maple (*Acer saccharum*), white snakeroot (*Ageratina altissima*), common blackberry (*Rubus allegheniensis*), Virginia creeper (*Parthenocissus quinquefolia*), hair sedge (*Bulbostylis capillaris*), bluecurls (*Trichostema dichotomum*), celandine (*Chelidonium majus*), common dayflower (*Commelina communis*), fireweed (*Erechtites hieraciifolia*), and hay-scented fern (*Dennstaedtia punctilobula*).

General Comments: 2011: DOT road-re-alignment planned. Plants found as part of environmental review request. Potential impacts to some of population in Area 2. Seed collected as mitigation measure for 12% of plants that may be impacted.

Management Comments: 2011: Some evidence of herbicide treatment along RR corridor and a roadside patch was recently mowed. Avoid direct impacts from herbicide and mowing, while allowing for continued adequate light and lack of competition, and adequate nearby suitable habitat.

Location

Survey Site Name: Rte. 12A

Managed By:

County: Grafton

Town(s): Lebanon

Size: 2.6 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: From Interstate 89 take exit 20. Turn right at the end of ramp onto Rte. 12A. Drive 0.8 miles to gravel pull-off on the right. Park here. Plants are located along the RR tracks on top of the bluffs east of the pull off, in an open area just south of an old red house, also just south of the bridge over the RR, and at one location just south of the pull-off east of the utility pole 7P10.

NHB DataCheck Results Letter

NH Natural Heritage Bureau

Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-2801

EOCODE:

PDBOROG0U0*026*NH

Dates documented

First reported: 2011-08-11

Last reported: 2011-08-11



Lee Toomey <ltoomey@dubois-king.com>

NHB Review: NHB24-2360

DNCR: NHB Review <nhbreview@dnr.nh.gov>

Mon, Sep 16, 2024 at 2:24 PM

To: Lee Toomey <ltoomey@dubois-king.com>

Cc: Aimee Rutledge <arutledge@dubois-king.com>, Tyson Morrill <tmorrill@dubois-king.com>, Brian Breslend <bbreslend@dubois-king.com>, Aaron Marcus <amarcus@dubois-king.com>

Hi Lee,

Thank you for confirming that a survey will be conducted. Please note that Appalachian barren-strawberry (*Geum fragarioides*)

was also included on the DataCheck letter, however it is approximately a mile away from the project area. Please have the surveyor keep an eye out for this species, however the survey should focus on Virginia stickseed (*Hackelia virginiana*).

If any rare plants are found there are several recommendations NHB could make depending on what type of impacts the work may have on the plant.

The first recommendation is always avoidance which would involve working to flag off the plants and adjusting design to ensure there are no impacts to the population.

If avoidance is not possible, then I will work with you to minimize impacts to the greatest extent possible which could include time of year restrictions, minor design changes, and collecting/spreading seed.

If impacts are unavoidable and the population will be greatly impacted, NHB may recommend a transplant, however this is never a preferred method for protecting a population as it is experimental.

Please let me know if you have any other questions.

Best,

Madeline (Maddie) Severance (she/her/hers)

Environmental Reviewer

New Hampshire Natural Heritage Bureau (NHB)

Division of Forests & Lands

N.H. Department of Natural & Cultural Resources

172 Pembroke Rd

12/17/24, 9:19 AM

DuBois & King, Inc. Mail - NHB Review: NHB24-2360

Concord, NH 03301

(603)-271-2834 (note the new number)

nhbreview@dncr.nh.gov

nhdfl.dncr.nh.gov

NHB DataCheck Tool

From: Lee Toomey <ltoomey@dubois-king.com>

Sent: Monday, September 16, 2024 10:53 AM

To: DNCR: NHB Review <nhbreview@dncr.nh.gov>

Cc: Aimee Rutledge <arutledge@dubois-king.com>; Tyson Morrill <tmorrill@dubois-king.com>; Brian Breslend <bbreslend@dubois-king.com>; Aaron Marcus <amarcus@dubois-king.com>

Subject: Re: NHB Review: NHB24-2360

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Maddie,

Great, thank you for these survey recommendations. We are working on receiving approval for this survey and have plans to send a qualified botanist with a tentative date next week. If the potential rare plants are located and documentation submitted, what mitigation steps does NHB typically require for potential project impacts?

Thank you,

Lee

On Thu, Sep 12, 2024 at 10:21 AM DNCR: NHB Review <nhbreview@dncr.nh.gov> wrote:

Hi Lee,

Thank you for being proactive with your project and checking to see what recommendations NHB may have regarding NHB24-2360.

Based on the project area and past coordination, NHB recommends a new survey for Virginia stickseed (*Hackelia virginiana*). The last survey appears to have been in 2020, and the population may have spread into the proposed impact area since then.

I will reiterate these recommendations on the DataCheck Letter, however I recommend conducting the survey prior to receiving the DataCheck Letter as the survey window for this species is almost over.

12/17/24, 9:19 AM

DuBois & King, Inc. Mail - NHB Review: NHB24-2360

NHB recommends a survey be conducted for Virginia stickseed by a qualified botanist (see attached qualifications) between mid-July and mid-September in suitable habitat within the proposed impact areas.

Virginia stickseed species information can be found [here](#).

If Virginia stickseed **is found** please document plants with GPS, fill out a rare plant reporting form ([simple](#) or [detailed](#)), and provide diagnostic photos of the plants.

If Virginia stickseed **is not found**, please put together a brief survey report/memo that includes the date of the survey, name of surveyor, map and photos of survey area, and a list of the dominant species observed.

Please let me know if you have any questions regarding these survey recommendations.

Best,

Madeline (Maddie) Severance (*she/her/hers*)

Environmental Reviewer

New Hampshire Natural Heritage Bureau (NHB)

Division of Forests & Lands

N.H. Department of Natural & Cultural Resources

172 Pembroke Rd

Concord, NH 03301

(603)-271-2834 (note the new number)

nhbreview@dncr.nh.gov

nhdfl.dncr.nh.gov

[NHB DataCheck Tool](#)

From: Lee Toomey <ltoomey@dubois-king.com>

Sent: Thursday, September 12, 2024 9:56 AM

To: DNCR: NHB Review <nhbreview@dncr.nh.gov>

Cc: Aimee Rutledge <arutledge@dubois-king.com>; Tyson Morrill <tmorrill@dubois-king.com>; Brian Breslend <bbreslend@dubois-king.com>

Subject: Re: NHB Review: NHB24-2360

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

12/17/24, 9:19 AM

DuBois & King, Inc. Mail - NHB Review: NHB24-2360

Good morning Maddie,

I submitted an additional NHB DataCheck request 24-2801 (payment en route) to renew expired requests NHB20-2021 and NHB22-0404, which both referenced Virginia stickseed (*Hackelia virginiana*) in the vicinity of proposed project work (map attached).

If possible, could you please share some advanced insight of NHB mitigation recommendations if the species is still present and proposed impacts are anticipated? Any advice on potential next steps would be greatly appreciated to help the team plan ahead while we await the formal response letter.

Thank you,

Lee

On Thu, Sep 5, 2024 at 2:04 PM DNCR: NHB Review <nhbreview@dncr.nh.gov> wrote:

Attached, please find the review of the NH Natural Heritage Bureau's (NHB) database to determine whether the proposed project could impact rare species and exemplary natural communities.

If you received a comment on the DataCheck Letter from NHB, please reply to this email with any documents, photos, or information requested.

If you received a comment on the DataCheck Letter from NHFG, please follow the consultation requirements listed on the DataCheck Letter and coordinate with NHFGreview@wildlife.nh.gov

Best,
Maddie

Madeline Severance
Environmental Reviewer

NH Natural Heritage Bureau
DNCR - Forests & Lands
172 Pembroke Rd
Concord, NH 03301
603-271-0687

If there are problems with your DataCheck letter or you need help using the DataCheck Tool, contact: (603) 271-0687

If there is a rare plant or exemplary natural community and an NHB Comment on your DataCheck letter, contact Maddie Severance for any environmental review questions: (603) 271-2834

If there is a rare wildlife species and an NHFG Comment on your DataCheck Letter, contact NHFG for any environmental review questions: (603) 271- 0467

--

Lee Toomey (he/they) Wetlands Scientist

12/17/24, 9:19 AM

DuBois & King, Inc. Mail - NHB Review: NHB24-2360

Phone: 802-424-4871
Email: ltoomey@dubois-king.com
Website: <https://www.dubois-king.com>
Address: 6 Green Tree Drive
South Burlington, VT 05403



--

Lee Toomey

Wetlands Scientist

DuBois-King Inc.

802-424-4871

Update 12/17/2024:

Rare plant surveys were conducted in Fall 2024 by botanist Aaron Marcus of DuBois & King, Inc. No rare plants were found within the delineated wetlands. Rare plants were found within the vicinity of the project area; additional data will be submitted to NHB.

Section 6

USFWS IPaC Review

- 6.1 Official Species List
- 6.2 Jesup's Milk-vetch Consistency Letter
- 6.2 Northern Long-eared Bat Consistency Letter



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

01/15/2025 18:23:34 UTC

Project Code: 2024-0123232

Project Name: NHDOT Project No. 13558A, Lebanon NH

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "New England Field Office Endangered Species Project Review and Consultation" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (Updated 4/12/2023) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

<https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis>

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/service/section-7-consultations>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/program/migratory-bird-permit>

<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

PROJECT SUMMARY

Project Code: 2024-0123232

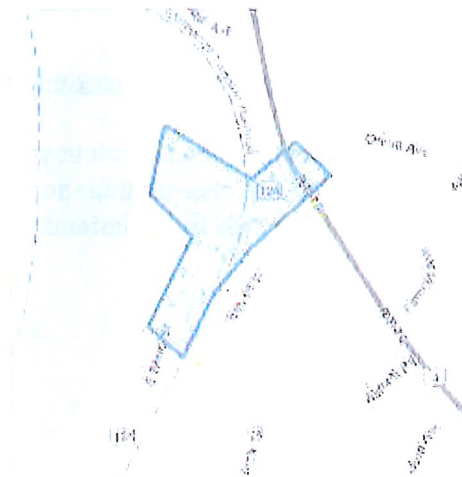
Project Name: NHDOT Project No. 13558A, Lebanon NH

Project Type: Bridge - Replacement

Project Description: The City of Lebanon (City), through the New Hampshire Department of Transportation's Local Public Agency program for municipally managed projects, proposes the replacement of a bridge (Br. No. 062/117) carrying NH12A over the New Hampshire Railroad, the widening and addition of a turning lane on NH12A, and the construction of a new local access drive for the Westboro Railyard.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.64368425,-72.31053300878136,14z>



Counties: Grafton County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Jesup's Milk-vetch <i>Astragalus robbinsii</i> var. <i>jesupii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/388	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Dubois & King, Inc.
Name: Lee Toomey
Address: 6 Green Tree Drive
City: South Burlington
State: VT
Zip: 05403
Email: ltoomey@dubois-king.com
Phone: 8028787661

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

01/15/2025 18:47:24 UTC

Project code: 2024-0123232

Project Name: NHDOT Project No. 13558A, Lebanon NH

Federal Nexus: yes

Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for
'NHDOT Project No. 13558A, Lebanon NH'

Dear Lee Toomey:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on January 15, 2025, for "NHDOT Project No. 13558A, Lebanon NH" (here forward, Project). This project has been assigned Project Code 2024-0123232 and all future correspondence should clearly reference this number.

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northeast Determination Key (DKey), invalidates this letter. **Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.**

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative effect(s)), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17). Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no further consultation with, or concurrence from, the Service is

required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect (NLAA)" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13]).

The IPaC results indicated the following species is (are) potentially present in your project area and, based on your responses to the Service’s Northeast DKey, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Jesup's Milk-vetch (<i>Astragalus robbinsii</i> var. <i>jesupii</i>)	Endangered	NLAA

Conclusion

The Service concurs to the above-mentioned determination(s) of may affect, not likely to adversely affect. This concurrence confirms receipt of your agencies coordination required under Section 7(a)(2) of the ESA.

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and are not covered by this conclusion:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

To complete consultation for species that have reached a “May Affect” determination and/or species may occur in your project area and are not covered by this conclusion, please visit the “New England Field Office Endangered Species Project Review and Consultation” website for step-by-step instructions on how to consider effects on these listed species and/or critical habitats, avoid and minimize potential adverse effects, and prepare and submit a project review package if necessary: <https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the species identified above. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project implements any changes which are final or commits additional resources.

Please Note: If the Action may impact bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) by the prospective permittee may be required. Please contact the Migratory Birds

Permit Office, (413) 253-8643, or PermitsR5MB@fws.gov, with any questions regarding potential impacts to Eagles.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference the Project Code associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

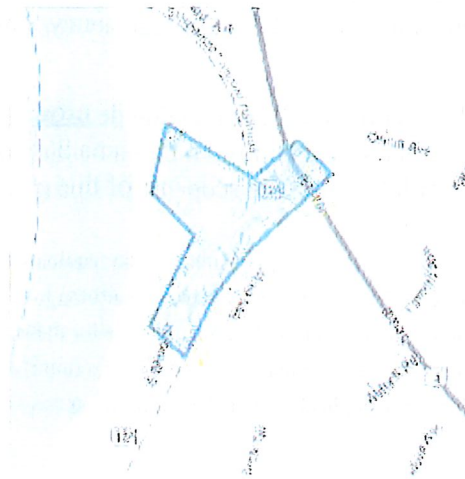
NHDOT Project No. 13558A, Lebanon NH

2. Description

The following description was provided for the project 'NHDOT Project No. 13558A, Lebanon NH':

The City of Lebanon (City), through the New Hampshire Department of Transportation's Local Public Agency program for municipally managed projects, proposes the replacement of a bridge (Br. No. 062/117) carrying NH12A over the New Hampshire Railroad, the widening and addition of a turning lane on NH12A, and the construction of a new local access drive for the Westboro Railyard.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.64368425,-72.31053300878136,14z>



QUALIFICATION INTERVIEW

1. As a representative of this project, do you agree that all items submitted represent the complete scope of the project details and you will answer questions truthfully?
Yes
2. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed species?

Note: This question could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered, or proposed species.

No

3. Is the action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?
Yes
4. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead agency for this project?
Yes
5. FHWA, FRA, and FTA have completed a rangewide [programmatic biological opinion](#) for transportation projects within the range of the Indiana bat and northern long-eared bat. Does your proposed project fall within the scope of this programmatic consultation?

Note: If you are using the Northeast Key to satisfy consultation requirements for species not covered by the FHWA programmatic (e.g., species other than Indiana bat or northern long-eared bat), select "No" and continue through the key. If you are unsure whether your project qualifies for the FHWA programmatic, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key to determine if the programmatic biological opinion is applicable to your project. If it is not applicable, you can return to this key.

No

6. Are you including in this analysis all impacts to federally listed species that may result from the entirety of the project (not just the activities under federal jurisdiction)?

Note: If there are project activities that will impact listed species that are considered to be outside of the jurisdiction of the federal action agency submitting this key, contact your local Ecological Services Field Office to determine whether it is appropriate to use this key. If your Ecological Services Field Office agrees that impacts to listed species that are outside the federal action agency's jurisdiction will be addressed through a separate process, you can answer yes to this question and continue through the key.

Yes

7. Are you the lead federal action agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)?
No
9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?
No
10. Is the lead federal action agency the Natural Resources Conservation Service?
No
11. Will the proposed project involve the use of herbicide where listed species are present?
No
12. Are there any caves or anthropogenic features suitable for hibernating or roosting bats within the area expected to be impacted by the project?
No
13. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **birds** (e.g., plane-based surveys, land-based or offshore wind turbines, communication towers, high voltage transmission lines, any type of towers with or without guy wires)?

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

14. Does any component of the project associated with this action include activities or structures that may pose a collision risk to **bats** (e.g., plane-based surveys, land-based or offshore wind turbines)?

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

15. Will the proposed project result in permanent changes to water quantity in a stream or temporary changes that would be sufficient to result in impacts to listed species?

For example, will the proposed project include any activities that would alter stream flow, such as water withdrawal, hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines? Projects that include temporary and limited water reductions that will not displace listed species or appreciably change water availability for listed species (e.g. listed species will experience no changes to feeding, breeding or sheltering) can answer "No". Note: This question refers only to the amount of water present in a stream, other water quality factors, including sedimentation and turbidity, will be addressed in following questions.

No

16. Will the proposed project affect wetlands where listed species are present?

This includes, for example, project activities within wetlands, project activities within 300 feet of wetlands that may have impacts on wetlands, water withdrawals and/or discharge of contaminants (even with a NPDES).

No

17. Will the proposed project activities (including upland project activities) occur within 0.125 miles of the water's edge of a stream or tributary of a stream where listed species may be present?

Yes

18. Will the proposed project directly affect a streambed (below ordinary high water mark (OHWM)) of the stream or tributary where listed species may be present?

No

19. Will the proposed project bore underneath (directional bore or horizontal directional drill) a stream where listed species may be present?

No

20. Will the proposed project involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds) where listed species may be present?

No

21. Will the proposed project involve the removal of excess sediment or debris, dredging or in-stream gravel mining where listed species may be present?

No

22. Will the proposed project involve the creation of a new water-borne contaminant source where listed species may be present?

Note New water-borne contaminant sources occur through improper storage, usage, or creation of chemicals. For example: leachate ponds and pits containing chemicals that are not NSF/ANSI 60 compliant have contaminated waterways. Sedimentation will be addressed in a separate question.

No

23. Will the proposed project involve perennial stream loss, in a stream or tributary of a stream where listed species may be present, that would require an individual permit under 404 of the Clean Water Act?

No

24. Will the proposed project involve blasting where listed species may be present?

No

25. Will the proposed project include activities that could negatively affect fish movement temporarily or permanently (including fish stocking, harvesting, or creation of barriers to fish passage).

No

26. Will the proposed project involve earth moving that could cause erosion and sedimentation, and/or contamination along a stream or tributary of a stream where listed species may be present?

Note: Answer "Yes" to this question if erosion and sediment control measures will be used to protect the stream.

No

27. Will the proposed project impact streams or tributaries of streams where listed species may be present through activities such as, but not limited to, valley fills, large-scale vegetation removal, and/or change in site topography?

No

28. Will the proposed project involve vegetation removal within 200 feet of a perennial stream bank where aquatic listed species may be present?

No

29. Will erosion and sedimentation control Best Management Practices (BMPs) associated with applicable state and/or Federal permits, be applied to the project? If BMPs have been provided by and/or coordinated with and approved by the appropriate Ecological Services Field Office, answer "Yes" to this question.

Yes

30. Is the project being funded, lead, or managed in whole or in part by U.S Fish and Wildlife Restoration and Recovery Program (e.g., Partners, Coastal, Fisheries, Wildlife and Sport Fish Restoration, Refuges)?

No

31. [Semantic] Does the project intersect the Virginia big-eared bat critical habitat?

Automatically answered

No

32. [Semantic] Does the project intersect the Indiana bat critical habitat?

Automatically answered

No

33. Will all activities occur within an area that is currently paved, graveled, routinely maintained, and/or inside a structure?

Yes

34. Will the proposed project involve temporary or permanent modification to hydrology, including groundwater recharge, that could result in changes to water quality, water quantity, or timing of water availability in proximity to listed plants?

No

35. Will the proposed project involve herbaceous native vegetation removal (including prescribed fire that would result in the burning of plants) or mowing?

No

36. Will the proposed project involve ground disturbance?

No

37. [Hidden Semantic] Does the project intersect the Jesup's Milk-vetch AOI?
Automatically answered
Yes
38. [Semantic] Does the project intersect the candy darter critical habitat?
Automatically answered
No
39. [Semantic] Does the project intersect the diamond darter critical habitat?
Automatically answered
No
40. [Semantic] Does the project intersect the Big Sandy crayfish critical habitat?
Automatically answered
No
41. [Hidden Semantic] Does the project intersect the Guyandotte River crayfish critical habitat?
Automatically answered
No
42. Do you have any other documents that you want to include with this submission?
No

PROJECT QUESTIONNAIRE

1. Approximately how many acres of trees would the proposed project remove?

1.5

2. Approximately how many total acres of disturbance are within the disturbance/
construction limits of the proposed project?

4.5

3. Briefly describe the habitat within the construction/disturbance limits of the project site.

Maintained roadway replacement of existing bridge.

IPAC USER CONTACT INFORMATION

Agency: Dubois & King, Inc.
Name: Lee Toomey
Address: 6 Green Tree Drive
City: South Burlington
State: VT
Zip: 05403
Email: ltoomey@dubois-king.com
Phone: 8028787661

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

01/15/2025 19:06:43 UTC

Project code: 2024-0123232

Project Name: NHDOT Project No. 13558A, Lebanon NH

Federal Nexus: yes

Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for
'NHDOT Project No. 13558A, Lebanon NH'

Dear Lee Toomey:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on January 15, 2025, for 'NHDOT Project No. 13558A, Lebanon NH' (here forward, Project). This project has been assigned Project Code 2024-0123232 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid. Note that conservation measures for northern long-eared bat and tricolored bat may differ. If both bat species are present in the action area and the key suggests more conservative measures for one of the species for your Project, the Project may need to apply the most conservative measures in order to avoid adverse effects. If unsure which conservation measures should be applied, please contact the appropriate Ecological Services Field Office.***

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	No effect
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	NLAA
	Endangered	

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete for northern long-eared bat and/or tricolored bat and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat or tricolored bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat or tricolored bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat and/or tricolored bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat and Tricolored Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Jesup's Milk-vetch *Astragalus robbinsii* var. *jesupii* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2024-0123232 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

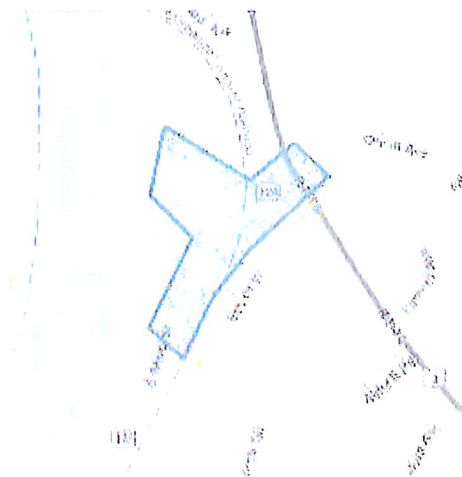
NHDOT Project No. 13558A, Lebanon NH

2. Description

The following description was provided for the project 'NHDOT Project No. 13558A, Lebanon NH':

The City of Lebanon (City), through the New Hampshire Department of Transportation's Local Public Agency program for municipally managed projects, proposes the replacement of a bridge (Br. No. 062/117) carrying NH12A over the New Hampshire Railroad, the widening and addition of a turning lane on NH12A, and the construction of a new local access drive for the Westboro Railyard.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.64368425,-72.31053300878136,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

Yes

7. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat, northern long-eared bat and tricolored bat.

Does your proposed action fall within the scope of this programmatic consultation?

Note: If you are unsure, but your action is transportation related, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key (FHWA DKey) in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer 'no' to this question if it is not.

No

8. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

Yes

9. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

10. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

11. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

12. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

No

13. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

No

14. Will the action cause effects to a covered bridge?

No

15. Are trees present within 1000 feet of the action area?

Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

16. Does the action include the intentional exclusion of bats from a building or structure?

Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

No

17. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

No

18. Will the action cause construction of one or more new roads open to the public?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic permanently or temporarily on one or more existing roads?

Note: For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

21. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

Note: For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

No

22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

No

23. Will the action include drilling or blasting?

Yes

24. Will the drilling or blasting produce noise or vibrations above existing background levels that will affect suitable summer habitat for northern long-eared bats and/or tricolored bats?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and/or tricolored bat, can be found in Appendix A in the USFWS' Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>

No

25. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

No

26. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

No

27. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

28. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

29. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

Yes

30. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

Yes

31. Will the proposed action result in the cutting of entire trees outside of the currently maintained utility right-of-way?

No

32. Will tree trimming, limbing, or cutting be used to expand the footprint of any currently maintained utility rights-of-way?

No

33. Will tree trimming, limbing, or cutting in currently maintained utility rights-of-way occur during the pup season?

Note: Bat activity periods for your state can be found in Appendix L of the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey [Guidelines](#).

Yes

34. Does the action area intersect the northern long-eared bat species list area?

Automatically answered

Yes

35. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

Automatically answered

No

36. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

37. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

If unsure, answer "Yes."

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

38. Does the action area intersect the tricolored bat species list area?

Automatically answered

Yes

39. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

40. Has a presence/probable absence bat survey targeting the [tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

Yes

41. Was the presence/probable absence survey conducted within the last 5 years?

Yes

42. Did you coordinate with your Ecological Services Field Office (ESFO) and receive approval of the results? If NO, please contact the appropriate local ESFO before completing this determination key - you may change your answer to 'yes' only after coordinating with the ESFO and uploading survey results.

Yes

43. Did survey results demonstrate the probable absence of tricolored bats?

Yes

44. Do you have any documents that you want to include with this submission?

No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.5

IPAC USER CONTACT INFORMATION

Agency: Dubois & King, Inc.

Name: Lee Toomey

Address: 6 Green Tree Drive

City: South Burlington

State: VT

Zip: 05403

Email: ltoomey@dubois-king.com

Phone: 8028787661

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration



February 27, 2025

Ref: 53178.00

City of Lebanon Conservation Commission
51 North Park St
Lebanon, NH 03766

Re: Conceptual Hearing Submission
Dartmouth Coach, 20 Labombard Road
Tax Map 64 Lot 34

Dear City of Lebanon Conservaton Commission,

On behalf of Dartmouth Coach (Owner), VHB is submitting the enclosed application package for initial conceptual review related to a potential parking lot expansion located at 20 Labombard Road (Tax Map 64 Lot 34). The package includes an existing conditions figure and a conceptual layout of a potential parking lot, including delineated wetlands that were mapped in January 2025.

The proposed project involves the construction approximately 40-50 parking spaces to support the demands of the Dartmouth Coach facility at 13 Labombard Road. The existing use of the site is paid parking for the Transportation Center, and is at capacity. The Dartmouth Coach facility in Lebanon, NH, serves as a critical hub for passengers traveling to and from Boston and New York City. Over the years, demand for services has increased, leading to significant parking shortages. The current parking capacity is often exceeded, either requiring passengers to find alternative parking solutions or for Dartmouth Coach to valet their vehicle, both of which may deter ridership. If parking is at capacity and alternative parking measures are unable to be met, often users of mass transit are then relegated to traveling in their own vehicle, which negates the positive impacts provided by mass transit and adds more traffic to the roadways.

The current concept reflects a total of 4,156 SF of wetland impact, for a wetland that was partially created by the existing parking lot's construction. Any new parking lot expansion would include best management practices, including stormwater management and water quality per local and state requirements, as well as measures that NHDES may implement through the wetland permit process.

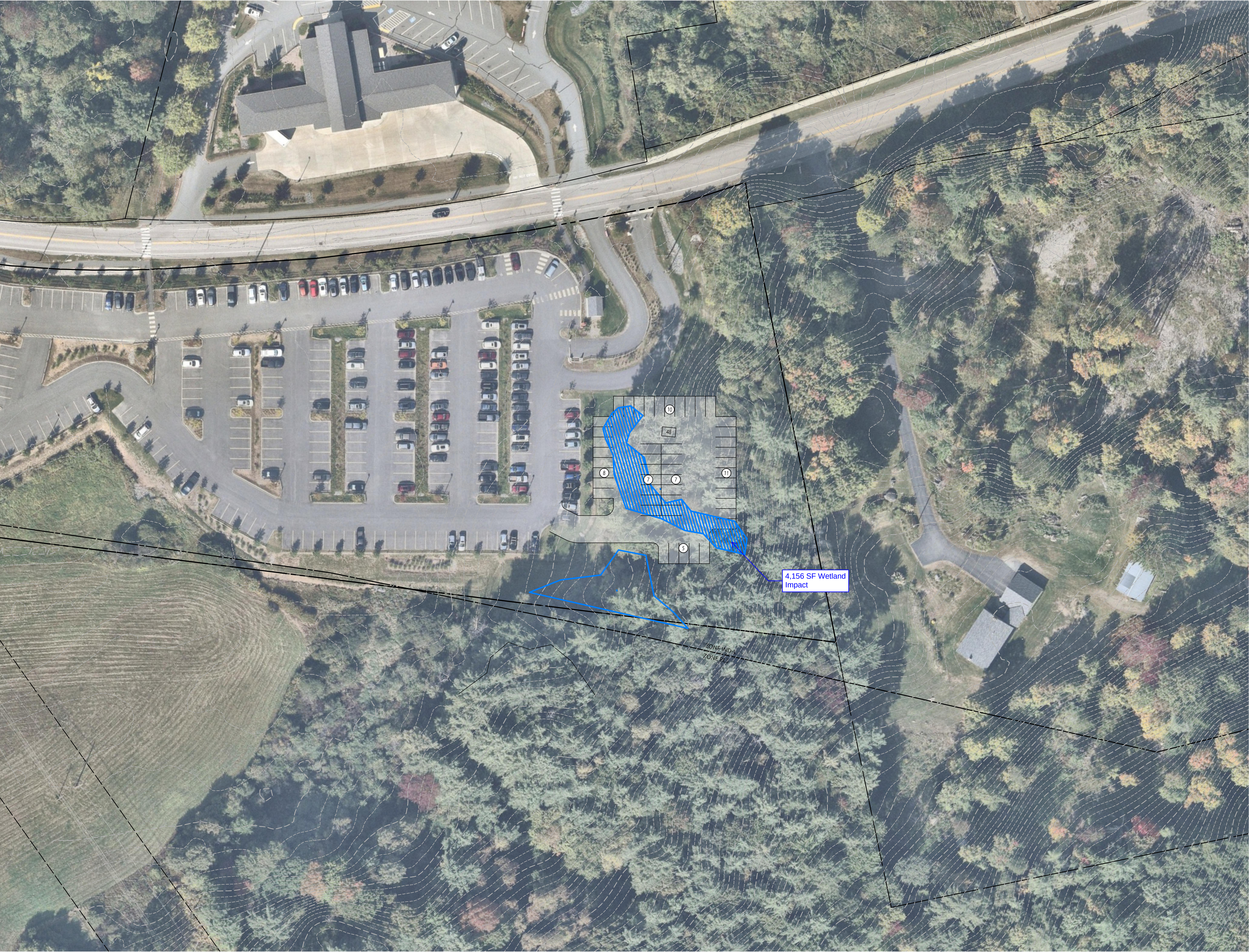
The goal of this conceptual hearing is to discuss the Conservation Commission's reaction to the potential impact of the noted wetlands, overview of any required permitting paths, and coordination on best practices if the project were to occur.

Thank you for your time and consideration of the project.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom D'Aguiar", with a stylized flourish at the end.

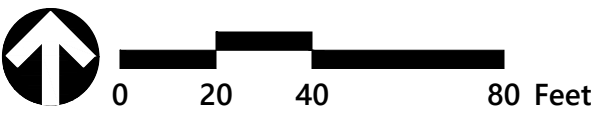
Tom D'Aguiar, PE
Project Engineer





vhb.com

2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900



Dartmouth Coach
13 Labombard Road
Lebanon, NH 03766

No.	Revision	Date	Appvd.

Designed by	DJB	Checked by	EKG
Issued for		Date	January 30, 2025

Review

Not Approved for Construction

Drawing Title

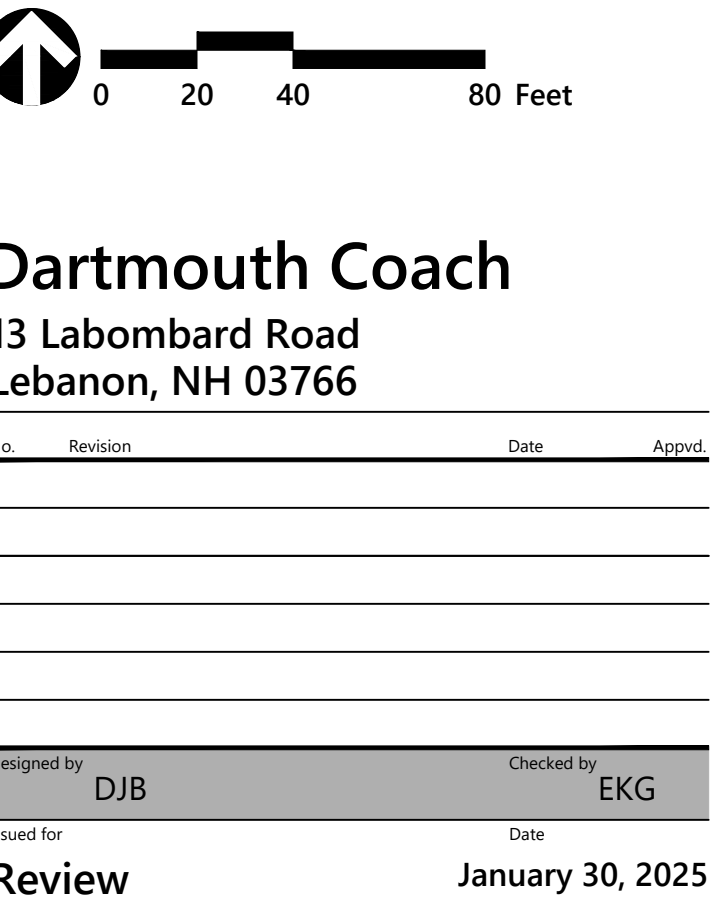
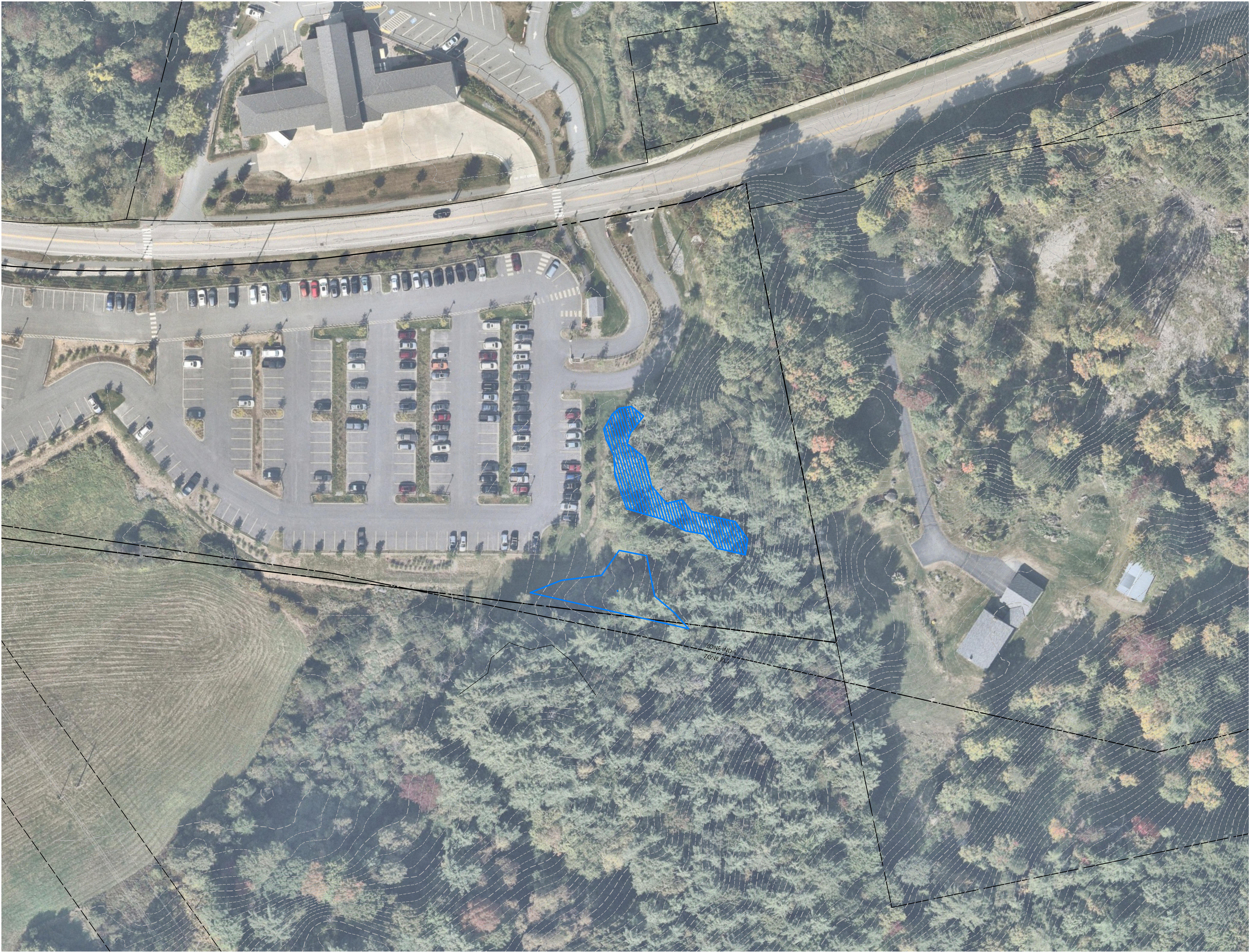
Conceptual Parking Layout

Drawing Number

C-1

Sheet 1 of 1

Project Number
84738.24



Not Approved for Construction

Drawing Title

Existing Parking Layout

Drawing Number

EX-1

Sheet of

1 1

Project Number

84738.24

Goals for 2025

Property Stewardship

- Forest Management Plans: review existing plans and assess status of recommended action items; evaluate the need for additional management plans. (MP 5.4b.2) *** Note: engage as time permits; Boston Lot the 2025 focus.*
- Review trail maintenance infrastructure needs, e.g., footbridges, etc. (MP 5.4b.2)
- Continued distribution & posting of Signage/Kiosks/Map resources (MP 5.4b.2) (SP 5.7.2) ***Note: to include updating existing Kiosks maps*
- Trail Maintenance (ongoing care of existing trails) (MP 5.4b.2 & MP 5.4b.5) (SP 5.7.3)
- Continue to explore access opportunities to conservation properties, including:
 - Goodwin Conservation Property bridge across Great Brook (SP?)
 - Alana Cole ADA opportunities (SP?)
 - Other ADA opportunities

Education / Outreach

- Explore Water Resource Education & Protection initiatives
 - Participation in the 2025 Mascoma Watershed Planning Study (SP?)
- Continued support for Wild About Lebanon (MP 5.6a.5) (SP 5.7.1)
- Host Amphibian Crossing Program (SP5.9.4)
- Host bi-annual Mascoma River clean-up (SP 5.8.3)
- Participation with the Upper Valley Forest Health Work Group (SP?)
- Increased awareness and encouragement for land protection (MP 5.6a.4)
 - *Note: updated CoL ConCom Program Web Page*

Land Conservation

- Expand the conservation land portfolio within the City of Lebanon (MP 5.4a.1) (SP 5.6.2) *Note: areas of interest for 2025 to include, Starr Hill Area; Mouth of the Mascoma; Bakers Crossing*
- Work with the Upper Valley Land Trust regarding adding to the Signal Hill conserved property (SP 5.6.2)
- Work with the Upper Valley Land Trust regarding permanently protecting Baker's Crossing (SP 5.6.2)
- Review and modify as needed existing regulations related to OS protection (e.g., ridgeline, aquifer, steep slopes, etc.) (MP 5.2b.2 & MP 5.5a.4) Steep slopes (SP 5.9.1)
- Assess the feasibility mitigation projects as part of the of Wetland Permit process

- Implement recommendations from the Northern Lebanon Study (SP 5.9.3)
- Implement recommendations from the wildlife corridor plans (SP 5.9.3)
- Examine the applicability of a vernal pool overlay district (SP 5.9.2)
- Conduct review of existing steep slope regulations (SP 5.9.1)

Miscellaneous

- Explore LOST Fund Investment Opportunities
- Continue to pursue participation in the NH F&G doe harvest program (SP 5.6.3)
- Innovative stormwater regulations existing in the Site Plan regulations to be migrated to the sub-division regulations as appropriate (SP 5.8.2)
- Continue to be involved in the inclusion of green infrastructure to the max extent possible for the pending Exit 18 project. *** ConCom request to add to the SP*
- Incorporate **aquatic passage** and **wildlife friendly designs** into **culvert replacement projects** city-wide in line with NH Stream Crossing Initiative. (MP 5.2.22 MP) *** ConCom request to add to the SP*
- Work with DPW to **reduce road salt use** near sensitive habitat areas. *** ConCom request to add to the SP*

Account Number	Account Description	Net Budget
1100-4611-0000-1200-0000	TEMPORARY PT WAGES	5,000.00
1100-4611-0000-2200-0000	FICA & MEDICARE TAXES	390
1100-4611-0000-2450-0000	TRAINING/LICENSES/DUES	1,200.00
1100-4611-0000-2600-0000	WORKERS' COMPENSATION	140
		6,730.00
1100-4611-0000-5000-0000	OTHER PURCHASED SERVICES	3,150.00
1100-4611-0000-5875-0000	MILEAGE	260
1100-4611-0000-6100-0000	GENERAL SUPPLIES	980
1100-4611-0000-7500-0000	FURNISHINGS, SMALL TOOLS & EQUIP	1,000.00
		5,390.00

2025 Year