



**LEBANON CONSERVATION COMMISSION**  
**APRIL 9, 2026 - 6:30 PM**  
**COUNCIL CHAMBERS, CITY HALL OR**  
**REMOTE VIA VIRTUAL PLATFORM**  
**LEBANONNH.GOV/LIVE**

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**1. Call to Order**

- A. To participate in this meeting, please [join live via Microsoft Teams](#) or call 929-229-5356 (access code: 839 259 279#). If you have trouble accessing this meeting, please [email Mark Goodwin](#)

**2. Approval of Minutes**

- A. March 12, 2026

**3. Open to the Public**

**4. Permit Review**

- A. **New Hampshire Department of Transportation, I-89 Bridge, Lebanon, Right of Way (ROW)**-Review and Comment on NHDES Wetland Permit application (major impact) for rehabilitation of the existing bridge. The permit was previously approved, but expired in 2024, this permit application is to permit the remaining construction. The improvements result in approx 3,469 sq ft of wetland impact, 2,846 sq ft of temporary impact and 623 sq ft of permanent impact. CC2026-03 (NHDES number 2026-00517)

**5. Study Items**

**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 who wish to attend remotely may do so by going to [LebanonNH.gov/Live](http://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 disrupt virtual or phone connection(s), the meeting will continue without remote access capabilities.

Any person with a disability who wishes to attend this public meeting and needs additional accommodation, please contact the ADA coordinator at City Hall by calling 603-448-4220 at least 72 hours in advance so that the City can make any necessary arrangements.

DRAFT

**LEBANON CONSERVATION COMMISSION  
MEETING MINUTES  
Remote Via Microsoft Teams  
LebanonNH.gov/Live  
March 12, 2026  
6:30 PM**

**MEMBERS PRESENT:** Sarah Riley (Chair), Erling Heistad, Barbara Hirai, Chris Johnson, Donald Lacey

**MEMBERS ABSENT:** Bruce James (Vice Chair), Susan Almy (Alt.), Ernst Oidtmann

**STAFF PRESENT:** Mark Goodwin (GIS Coordinator)

---

1       **1. CALL TO ORDER:**  
2

3       A. Chair Riley called the meeting to order at 6:31 PM.  
4

5       **2. APPROVAL OF MINUTES:**

6       A. January 29, 2026  
7

8       *Ms. Barbara Hirai MOVED to approve the minutes as written*  
9       *Seconded by Mr. Erling Heistad*

10  
11       *\*The MOTION was approved (5-0)*  
12

13       B. February 12, 2026  
14

15       Minutes will be approved at the April 9, 2026 meeting.  
16

17       **3. OPEN TO THE PUBLIC:**  
18

19       **4. PERMIT REVIEW:**  
20

21       A. **Robert J Oakes (Property Owner), Oakes and Son Construction, LLC (applicant),**  
22       **Laplante Rd. Lebanon, Tax Map 138, Lot 270-A.**

23       Review and Comment on Zoning Board Special Exception application. Applicant proposes a  
24       Planned Unit Residential Development and is proposing encroachment on the wetland buffer  
25       for grading, stormwater, and grass lawns. Applicant requests a Special Exception pursuant to  
26       Article IV, Section 401.4 (Permitted Uses) of the Zoning Ordinance. **CC2026-02**  
27

28       Mr. Chris Guida spoke on behalf of the project owners. Mr. Bobby Oakes attended remotely.  
29

30       Mr. Goodwin said that their charge (ConCom) is to review and comment from a natural  
31       resources perspective to the Zoning Board about this applicant's application, which is needed  
32       because of the grading in the wetland buffer and some sheds that are below the threshold.  
33

1 Mr. Guida shared a map of the current topography also showing the area of the proposed  
2 construction, circled in orange. Next, he showed a map of the proposed grading.

3  
4 There is no proposed cutting of trees (this is former farmland) or anything along the slopes.  
5 He showed where the septic systems will be positioned; they have downgradient nitrate setbacks,  
6 centrally located, and they will be maintained on this site.

7  
8 Conservation Commission had the opportunity to look at the project map and ask their  
9 questions about this project. Mr. Guida confirmed that this project will not change the  
10 watershed hydrology at all and that the only change is that it will slightly redirect the flow.

11  
12 As far as what is allowed as special exception in the buffer, under 4014, this is allowed,  
13 confirmed by Mr. Mark Goodwin.

14  
15 Chair Riley asked if the driveways could be shortened and the 10'x10' sheds moved closer to  
16 the road, and ideally out of the buffer, to reduce the buffer impacts. Mr. Guida said that the  
17 driveways are based on town requirements and engineering; he will check to see if these  
18 could be tightened up, but he does not think that these changes would significantly change the  
19 proposed impact or the grading that is needed.

20  
21 Mr. Guida agreed to ask about these and get some answers. Chair Riley said that there is a  
22 scientific reason for the 100' buffer requirement from a high value wetland because it helps to  
23 mitigate sediment and nutrient inputs into the wetlands.

24  
25 Ms. Hirai inquired about the proposed walking paths and if they will be permeable or  
26 impermeable? Mr. Lacey added that this project adds a great deal of impermeability  
27 compared to how it currently is. He reiterated that the 100-year storms are now happening  
28 every year or two. DES is aware of this as well.

29  
30 Chair Riley said that the HOA policies that are developed for this new neighborhood/  
31 community could ideally educate and limit homeowners' use of fertilizer and chemicals and  
32 salt especially on the back sides of residents' properties, and any chemical that might get into  
33 the wetlands. Anything that tries to minimize the size of lawns in this buffer will be  
34 worthwhile (to help reduce potential contaminants). Mr. Guida made notes to take back to the  
35 owners.

36  
37 These suggestions all need to be part of ConCom's recommendations to the Planning Board.

38  
39 Mr. Heistad said that he'd like to see a maintenance schedule for this proposed project,  
40 particularly the pathways, of how these surfaces will be treated. He added that if they are not  
41 maintained correctly, they will over time fill up with sand, and ultimately become  
42 impermeable, which could be problematic for this new community.

43  
44 Ms. Hirai said that she would be opposed to any impermeable pathway surfaces within the  
45 buffer. Chair Riley added that the HOA could stipulate strongly how dog waste is managed,  
46 so that for example, waste is not left in the buffer.

47  
48 Chair Riley recapped on behalf of ConCom, for Mr. Guida, and this recap is the stated  
49 conditions below :

50

1 **Chair Riley *MOVED* that the Lebanon Conservation Commission recommend that the Zoning Board**  
2 **(ZBA) grant Special Exception to Robert J. Oakes (Property Owner), Oakes and Son Construction,**  
3 **LLC (applicant), Laplante Rd. Lebanon, Tax Map 138, Lot 27 – A, with the following conditions:**

- 4
- 5 • Regarding the walking path(s), if any, within the buffer, be unpaved and that salt is
- 6 not applied to this surface.
- 7 • Dog waste disposal stations be located at the entrances to pathways and also have a
- 8 stipulation within the HOA that dog waste be picked up and not discarded or left on
- 9 the land.
- 10 • No snow disposal within the buffer
- 11 • HOA requirements that all sheds be placed outside of the buffer (to reduce the
- 12 likelihood of chemical contaminants)
- 13 • Have the project attempt to do some minimization of any buffer impacts by
- 14 shortening driveways where possible, and reduce lawn areas where possible, with the
- 15 goal being to reduce the total square foot impact to the buffer.
- 16 • ConCom also ask for HOA rules to include wildlife friendly erosion control
- 17 measures. Solid actionable items could be to encourage native plantings, allow for
- 18 pollinator meadows in front yards, and *not require lawns*, to name a few. This new
- 19 neighborhood could be an example for others. The more education that happens, the
- 20 better for residents here in Lebanon.
- 21

22 ***Seconded by Mr. Don Lacey***

23

24 ***\*The MOTION was approved (5-0)***

25

26 The Conservation Commission complimented Mr. Guida on his thorough and easy-to-understand

27 presentation, adding that the detailed large maps (and in the room on an easel) were extremely

28 helpful to envision the project.

29

30 **5. STUDY ITEMS: None**

31

32 **6. COMMITTEE REPORTS:**

33

34 **A. Biodiversity Group (Invasives)**

35 Lynn Fisher has taken her exam and is awaiting the results.

36

37 Mr. Lacey made some applications of herbicides at Baker’s Crossing; Winter is a good time to do this

38 when there are no leaves on the trees and no native plants growing up that would be damaged by him

39 trampling on them.

40

41 Ms. Hirai tried to cut a tree at Alana Cole (near the rope swing) trying to reroute it, but her chainsaw

42 wasn’t sufficient for this task. So, she asked that this project be put *high on their list of projects to be*

43 *done.*

44

45

46 **B. Stewardship**

47

48 Mr. Lacey will be having knee surgery – in April and in June, if all goes as planned. So, he will not be

49 mowing at Two Rivers consistently this year, as he has done in the past. They also need the path at Signal

50 Hill mowed as well. It was agreed it is nice having those trails; Chair Riley said they will try to find

1 someone to volunteer to do this work, possibly starting in early June. If the call for volunteers doesn't  
2 work, then they will need to find paid help.

3  
4 -Ranger

5 -Trail Coordinator

6 -Monitors and Stewards  
7

8 Ms. Hirai and Ms. Riley walked at Two Rivers earlier this week and only wore low top boots but the  
9 trails had not been heavily traveled so were rather precarious; they post holed there. In spite of this, Sarah  
10 was still able to get many beautiful pictures of both the Mascoma River (lots of ice on it) and the  
11 Connecticut River which looked mostly clear.  
12

13 Mr. Lacey said he put up stakes at Baker's Crossing last year, to help the DPW not mow so close to the  
14 river and thereby limit access. and asked Mr. Chris Johnson to convey to the Ledyard Canoe Club rowers  
15 to please be careful not to displace these poles. Mr. Johnson will do so. There are also some wires down  
16 there, to be aware of, downstream of the bridge.  
17

18 Mr. Johnson said that the Ledyard Club is aware of past issues and they want to be good stewards of this  
19 area.  
20

21  
22 C. Wild about Lebanon

23 D. Amphibian Crossings  
24

25 Mr. Chris Johnson has completed an updated map to include data from the last two years. Mr. Goodwin  
26 said that it is under the Program page for the Conservation Commission. Mr. Johnson said that looking  
27 forward, it would be helpful to have GPS coordinates from people as they note sitings, or even the closest  
28 street address, or telephone pole numbers on named streets.  
29

30 Mr. Johnson will continue to keep this siting map updated.  
31  
32

33 The City of Lebanon site was changed quite a lot recently, and in ConCom's opinion, does not put the  
34 focus where it needs to be. For example, instead of leading with what The Conservation Commission  
35 does, it leads with the opportunity to join ConCom.  
36

37 E. LUCT/Current Use  
38

39 Chair Riley got a 2025 year end statement for the Lost Fund, but it is *not itemized for anything*. She is  
40 going to request an itemization for the year, which should be readily available. The balance as of 12.31.25  
41 was \$1,450,000 approximately. The net gain was \$48,000 approximately.  
42

43 Mr. Goodwin maintains a spreadsheet for the properties and keeps a running track of these property  
44 transactions.  
45

46 Chair Riley said that in Hanover, this type of account is managed by the PDIP, the Public Deposit  
47 Investment Pool, and Hanover is trying to get viewing access, so that they can look at their funds and  
48 details of transactions, at any time. New Hampshire PDIP has this ability. Chair Riley is going to ask  
49 Finance if that is where Lebanon's fund is managed, to see if they too can have access to view PDIP.  
50

51 F. Other Subcommittees

1  
2 Chair Riley said that the Tree Board is trying to get 200 trees planted in the City of Lebanon this year.  
3 Any private property owner of Lebanon that is interested in adding a tree on their property, visible from  
4 the street, can contact Deanna Armstrong @ 603-448-3112 or visit: lebanonnh.gov/1943/Green-Streets-  
5 Initiative to request a tree. The trees will be free to the homeowner. There are several trees to choose  
6 from, and the City will do the planting. A copy of this flyer is being included in these Minutes and it  
7 includes a QR code.

8  
9 **7. OTHER BUSINESS:**

10  
11 A. FYIs

12  
13 Ms. Hirai said that a lady did a presentation at the City, of the Mascoma Lake Watershed Base  
14 Management, to the public. Ms. Hirai said that it was an excellent and clear presentation. Chair Riley is  
15 going to see if it was recorded or available another way, for people to see.  
16 Ms. Hirai said that the key issue was nitrogen.

17  
18 Chair Riley will try to locate this presentation.

19  
20 Chair Riley said that recently she was looking at the DES website, and that there has been a wetland  
21 application for the Interstate 89 bridge, in March of this year, but she hasn't heard anything about it yet.  
22 She will call DES on Friday, to learn what this is about.

23  
24 B. Follow Up

25  
26 C. Workshops and Educational Opportunities

27  
28 Mr. Lacey plans to go to the Saving Special Places conference later this year and will put in a request for  
29 this with Crystal Taplin.

30  
31 **8. FUTURE AGENDA ITEMS:**

32  
33 **9. ADJOURNMENT:**

34  
35 Ms. Hirai acknowledged that Chair Heistad is no longer a City Council representative. He has been  
36 serving in this role for 15 years.

37  
38 The Conservation Commission thanked Mr. Heistad for his great contribution to serving on the  
39 Conservation Commission in his City Council role.

40  
41 It is believed that there will be another slot made for ConCom, and if so, Mr. Heistad will continue to  
42 serve on The Conservation Commission.

43  
44 **Mr. Chris Johnson MOVED for adjournment**  
45 **Seconded by Mr. Don Lacey**

46  
47 **\*The MOTION was approved (5-0)**

48  
49 The meeting ended at 8:47P.M.

50

1 Respectfully submitted,  
2 Cinda Mersel  
3 Recording Secretary

4

5

6

7 Attachment: **GREEN STREETS FLYER**

8

9

# WOULD YOU LIKE THE CITY OF LEBANON TO PLANT A SHADE TREE ON YOUR PROPERTY?



Be a part of

## LEBANON'S GREEN STREETS INITIATIVE

supported by a grant from the USDA!

### OUR GOALS:

- Plant 200 new trees in the City
- Provide much-needed shade to cool our City streets and public spaces
- Make Lebanon a more pedestrian-friendly and beautiful place

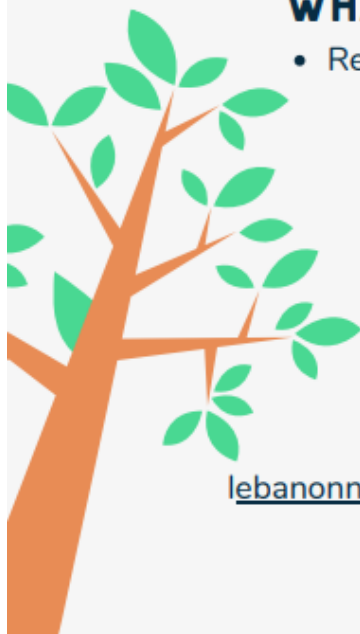
### WHAT DO WE NEED NOW?

- Residents who want trees!

The City will plant you a tree at no cost to you.

The tree must be on the street side of your property.

We will help you choose the species and placement.



### QUESTIONS? INTERESTED?

Contact Deanna Armstrong  
at 603-448-3112  
or visit

[lebanonnh.gov/1943/Green-Streets-Initiative](http://lebanonnh.gov/1943/Green-Streets-Initiative)  
to request a tree.



# STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

**DATE:** March 10, 2026

**SUBJECT:** Standard Dredge & Fill Application  
Lebanon-Hartford 16148

**FROM:** Rhona Thomson (*AMO for RT 2/19/26*)  
Wetlands Program Specialist  
Department of Transportation

**TO:** Karl Benedict  
New Hampshire Wetlands Bureau  
29 Hazen Drive, P.O. Box 95  
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NHDOT Bureau of Highway Design for the subject major impact project. This project was previously authorized under the NHDES File No. 2018-03001. Construction commenced in September 2020. Construction has not been completed at this time and the original permit expired on August 16, 2024. This permit application is intended to permit the remaining construction described herein. The purpose of the bridge rehabilitation project is to improve safety by addressing geometric deficiencies and to preserve the structural integrity of the existing I-89 northbound and southbound bridges while maintaining this vital, high-volume transportation link between New Hampshire and Vermont. This permit is for the work that remains of the bridge rehabilitation project that is actively under construction. The previously issued permit for this project (Permit 2018-03001) has expired.

This project was reviewed at the Natural Resource Agency Coordination Meeting on February 15<sup>th</sup>, 2017. A copy of the minutes has been included with this application package.

NHDOT anticipates and requests that this project be reviewed and permitted by the Army Corps of Engineers through the State Programmatic General Permit process. A copy of the application has been sent to the Army Corps of Engineers.

Mitigation for 217 linear feet of impacts to perennial stream channel and banks of the Connecticut River was previously provided through a payment to the NHDES Aquatic Resource Mitigation (ARM) Fund on September 4, 2020, in the amount of \$53,746.56. Additional compensatory mitigation is not included with this permit application.

Erosion Control Plans contained within this application should be considered the final erosion control plans in accordance with Env-Wt 527.05(a).

The lead people to contact for this project are Brett Rusnock, Bureau of Highway Design (603-271-1541 or [brett.m.rusnock@dot.nh.gov](mailto:brett.m.rusnock@dot.nh.gov)) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (603-271-3226 or [Andrew.M.OSullivan@dot.nh.gov](mailto:Andrew.M.OSullivan@dot.nh.gov)).

A payment voucher has been processed for this application (Voucher #821625) in the amount of \$2,081.40.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

RCT;

cc:

BOE Original  
Towns of Lebanon and Hartford (4 copies via certified mail)  
Connecticut River LAC (1 copy via certified mail)  
Judy Houston, NHDES (via electronic notification)  
Mike Dionne & Jessica Whitmore, NH Fish & Game (via electronic notification)

US Fish & Wildlife (via electronic notification)  
Jeanie Brochi, US Environmental Protection Agency (via electronic notification)  
Michael Wierbonics & Rick Kristoff, US Army Corps of Engineers (via electronic notification)  
Kevin Nyhan, BOE (via electronic notification)

S:\Environment\PROJECTS\LEBANON\16148\Wetlands\2026 Wetland Permit\Submission Docs\WETAPP - Coverletter -16148.doc



## INTERSTATE 89 OVER THE CONNECTICUT RIVER

Bridge No. 044/104 (N.B.)  
Bridge No. 044/103 (S.B.)

# NHDES STANDARD DREDGE & FILL APPLICATION



### PREPARED BY:



Lebanon, NH – Hartford, VT

A001(154)

16148

Previously Authorized Under  
NHDES File No. 2018-03001

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**NHDES STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION FORM**

**SUPPLEMENTAL PROJECT DESCRIPTION**

**FIGURE 1 – USGS LOCATION MAP**

**ATTACHMENT A: MINOR AND MAJOR PROJECTS**

**NHDES AVOIDANCE AND MINIMIZATION CHECKLIST**

**NHDOT NATURAL RESOURCE AGENCY COORDINATION MEETING MINUTES**

**FIGURE 2 - CONNECTICUT RIVER WATERSHED MAP**

**NHDES DATACHECK RESULTS LETTER**

**DES PLANT CORRESPONDENCE**

**DES WILDLIFE CORRESPONDENCE**

**USFWS OFFICIAL SPECIES LIST**

**USFWS JESUP'S MILK-VETCH INFORMAL CONSULTATION LETTER**

**USFWS NORTHERN LONG-EARED BAT AND TRICOLORED BAT CONSISTENCY LETTER**

**SECTION 106 EFFECT MEMO**

**NH GP APPENDIX B – USACE SECTION 404 CHECKLIST**

**PHOTOGRAPHS**

**CONSTRUCTION SEQUENCE**

**NHDES SHORELINE STABILIZATION FORM**

**WETLAND IMPACT AND EROSION CONTROL PLAN SET**

## NHDES Standard Dredge and Fill Wetlands Permit Application Form

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# STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION



Water Division / Land Resources Management Program /  
Wetlands Bureau

[Check the status of your application](#)

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

<b>Applicant name:</b>		<b>Town name:</b>	
<i>Administrative Use Only</i>	<i>File number:</i>	<i>Initials:</i>	
	<i>Check number:</i>	<i>Amount:</i>	

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](#).

<b>SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))</b>	
<i>Please use the <a href="#">Land Resources Management Permit Planning Tool (LRMPPT)</a>, the <a href="#">DataCheck Tool</a>, the <a href="#">Stream Crossing Initiative Data Viewer</a> or other sources to assist in identifying key features such as <a href="#">Priority Resource Areas (PRAs)</a>, <a href="#">protected species or habitats</a>, coastal areas, designated rivers or designated prime wetlands.</i>	
Has the required planning been completed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the project qualify for an Impact Classification Adjustment (such as an agreement from the NHDES Ecological Review Section for a classification downgrade) or a Project-Type Exception (such as a Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Protected species or habitat?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>If yes, species or habitat name(s):</li> <li>DataCheck project ID number:</li> </ul>	
Bog?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Floodplain wetland contiguous to a tier 3 or higher watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Designated prime wetland or duly-established 100-foot buffer?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>Name of Local River Management Advisory Committee (LAC):</li> <li>A copy of the application was sent to the LAC on (mm/dd/yyyy):</li> </ul>	
For dredging projects, is the subject property contaminated?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>If yes, list contaminant:</li> </ul>	
Is there potential to impact impaired waters, Class A waters or Outstanding Resource Waters?	<input type="checkbox"/> Yes <input type="checkbox"/> No
For stream crossing projects, provide watershed size (see <a href="#">LRMPPT</a> or Stream Stats):	

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

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

[des.nh.gov](http://des.nh.gov)

**SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))**  
*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.*

**SECTION 3 - PROJECT LOCATION**  
*Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.*

Address:  
 Town or city:  
 Tax map/block/lot/unit:  
 U.S. Geological Survey (USGS) topo map waterbody name:  
 n/a  
 (Optional) Latitude / longitude in decimal degrees (to five decimal places):

**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:  
 Mailing address:  
 Town or city: State: ZIP:  
 Email address: Phone:

**Electronic communication:** By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically: **jae**

**SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))  N/A**

Last name, first name, middle initial:  
 Company name:  
 Mailing address:  
 Town or city: State: ZIP:  
 Email address: Phone:

**Electronic communication:** By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically: **cjp**

<b>SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))</b>			
<i>If the owner is a trust or a company, then complete with the trust or company information.</i> <input type="checkbox"/> Same as applicant			
Name:			
Mailing address:			
Town or city:		State:	ZIP:
Email address:		Phone:	
<b>Electronic communication:</b> By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically:			
<b>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))</b>			
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):			
<b>SECTION 8 - AVOIDANCE AND MINIMIZATION</b>			
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 <a href="#">Wetlands Best Management Practice Techniques For Avoidance and Minimization</a> and the <a href="#">Wetlands Permitting: Avoidance, Minimization and Mitigation</a> 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 <a href="#">Avoidance and Minimization Checklist</a> , the <a href="#">Avoidance and Minimization Narrative</a> , 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.			
<b>SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)</b>			
<i>If unavoidable jurisdictional impacts require mitigation, a mitigation <a href="#">pre-application meeting</a> must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.</i>			
Mitigation pre-application meeting date (mm-dd-yyyy):		<input type="checkbox"/> N/A - Mitigation is not required.	
<b>SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (ENV-WT 313.01(A)(1)C)</b>			
<i>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>			
<input type="checkbox"/> I confirm submittal.		<input type="checkbox"/> N/A – Compensatory mitigation is not required)	

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

For each jurisdictional area that will be or 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; meaning work was started or completed without a permit).

For intermittent and ephemeral streams, linear feet of impact are 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/ivers, linear feet of impact are 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			<input type="checkbox"/>			<input type="checkbox"/>
	Scrub-shrub Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Emergent Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Wet Meadow			<input type="checkbox"/>			<input type="checkbox"/>
	Vernal Pool			<input type="checkbox"/>			<input type="checkbox"/>
	Designated Prime Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Duly-established 100-foot Prime Wetland Buffer			<input type="checkbox"/>			<input type="checkbox"/>
Surface Water	Intermittent / Ephemeral Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Perennial Stream or River			<input type="checkbox"/>			<input type="checkbox"/>
	Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - River			<input type="checkbox"/>			<input type="checkbox"/>
Banks	Bank - Intermittent Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Bank - Perennial Stream / River			<input type="checkbox"/>			<input type="checkbox"/>
	Bank / Shoreline - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
Tidal	Tidal Waters			<input type="checkbox"/>			<input type="checkbox"/>
	Tidal Marsh			<input type="checkbox"/>			<input type="checkbox"/>
	Sand Dune			<input type="checkbox"/>			<input type="checkbox"/>
	Undeveloped Tidal Buffer Zone (TBZ)			<input type="checkbox"/>			<input type="checkbox"/>
	Previously-developed TBZ			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Tidal Water			<input type="checkbox"/>			<input type="checkbox"/>
<b>TOTAL</b>							

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

- Minimum impact: flat fee of \$600.
- Non-enforcement related, publicly funded and supervised restoration projects, regardless of impact classification: flat fee of \$600 (refer to R2-A:3, 1(c) for restrictions).
- Minor or major impact fee: calculate using the table below.

Permanent and temporary (non-docking):	SF	× \$0.60 =	\$
Seasonal docking structure:	SF	× \$3.00 =	\$
Permanent docking structure:	SF	× \$6.00 =	\$
Projects proposing shoreline structures (including docks): add \$600.			\$
Total			\$
The application fee for minor or major impact is the above calculated total or \$600, 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:	To the best of the signer’s knowledge and belief, all required notifications have been provided.
Initials:	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:	The signer understands that submission of false, incomplete, or misleading information constitutes grounds for NHDES to: <ol style="list-style-type: none"> <li>1. Deny the application.</li> <li>2. Revoke any approval that is granted based on the information.</li> <li>3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the office of professional licensure and certification established by RSA 310.</li> </ol>
Initials:	If the applicant is not the owner, each property owner’s 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):	Print name legibly:	Date:
Signature (applicant, if different from owner):	Print name legibly:	Date:
Signature (agent, if applicable):	Print name legibly:	Date:

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 provided a hard copy and a digital copy of a completed application form, with required attachments, to the town or city indicated below.	
Town or city clerk signature:	Print name legibly:
Town or city:	Date:

**DIRECTIONS FOR TOWN OR CITY CLERK**

1. Upon confirming receipt of one paper copy and one digital copy of this application, with its attachments, Immediately sign a copy of the application and return it to the applicant for submittal to the department.
2. Retain the hard copy for review by the public and immediately distribute a digital copy of the application package to each of the following bodies:
  - a. Local conservation commission.
  - b. Local governing body such as select board or town or city council.
  - c. Local planning board.

**DIRECTIONS FOR APPLICANT**

1. Bring one hard copy of the application and its attachments, and one digital copy of the same, to the municipal clerk(s) of the town(s) in which proposed jurisdictional impacts are located. Digital copies shall be in PDF format or other formats approved by NHDES.
2. Submit the copy of the complete application package signed by the municipal clerk(s) to NHDES.
3. State agency applicants may file simultaneously with NHDES and the municipal clerk.

RSA482-A:3 I(a) Exempt, State Agency, 4 copies sent Certified Mail

## Supplemental Project Description

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## Supplement to Standard Dredge & Fill Application Form

**NOTE: This project was previously authorized under the NHDES File No. 2018-03001. Construction commenced in September 2020. Construction has not been completed at this time and the original permit expired on August 16, 2024. This permit application is intended to permit the remaining construction described herein.**

## SECTION 2 – PROJECT DESCRIPTION

### Existing Conditions

The project area straddles the Vermont-New Hampshire state line between the towns of Hartford, VT and Lebanon, NH where I-89 crosses the Connecticut River. The state line was determined in a 1934 U.S. Supreme Court decision to be the low water line on the Vermont side, as it occurred at that time. Therefore, most of the river channel is located within New Hampshire. The I-89 bridge spans the Connecticut River and the New England Central Railroad (NECRR) on the Vermont side.

On the Vermont side of the river crossing, commercial development along the I-91 interchange and the village of White River Junction are found to the north, with single family homes and the New England Central Railroad running along the river. The New Hampshire side also contains commercial development along the Exit 20 interchange, the Lebanon Municipal Airport, and the village of West Lebanon to the north.

The Connecticut River has a width of approximately 550 feet in the project area and is a 7<sup>th</sup> order river with a watershed that extends north into Canada. The Cowardin classification for the river at the project location is R2UBH, or riverine lower perennial, with an unconsolidated bottom, permanently flooded. Under the bridge on the Vermont side, the riverbank is armored with stone from the rail line down to a low floodplain that parallels the river. Vegetation includes eastern hemlock (*Tsuga canadensis*), aspen (*Populus sp.*), white birch (*Betula papyrifera*), elm (*Ulmus sp.*) and honeysuckle (*Lonicera sp.*). The land on the New Hampshire side of the river is generally lower and supports tree species including white pine (*Pinus strobus*), sycamore (*Platanus occidentalis*), and elm along with invasive species such as Japanese knotweed (*Fallopia japonica*), Morrow's honeysuckle (*Lonicera morrowii*), and Japanese barberry (*Berberis thunbergii*). The riverbank on both sides shows evidence of historical and recent disturbance.

The northbound (NB) and southbound (SB) barrels of I-89 each consist of two travel lanes, with direction of travel carried by separate but identical bridge structures. Bridge No. 044/103 carries I-89 SB traffic and Bridge No. 044/104 carries I-89 NB traffic. The six-span, 840-foot bridges were constructed in 1966 and consist of non-composite, haunched steel plate girders founded on cantilever abutments and hammerhead piers. Each bridge has five piers. Four of the piers are located in the river in NH and the fifth pier is located adjacent to the rail line in VT. The bridges are inspected and maintained by the NHDOT through an agreement with the Vermont Agency of Transportation (VTTrans).

## Project Description

The purpose of the bridge rehabilitation project is to improve safety by addressing geometric deficiencies and to preserve the structural integrity of the existing I-89 northbound and southbound bridges while maintaining this vital, high-volume transportation link between New Hampshire and Vermont. This permit is for the work that remains of the bridge rehabilitation project that is actively under construction. The previously issued permit for this project (Permit 2018-03001) has expired.

Active construction has been ongoing since September 2020. Bridge rehabilitation work that has already been completed includes the following: Bridge in-fill between the two existing bridges, new piers constructed between the existing piers, new superstructure and scour protection. A temporary bulkhead on each bank and temporary work trestle across the Connecticut River was constructed on the downstream side of the bridge.

Work that remains to be completed within NHDES jurisdiction consists of the following:

- Construction of the stone apron at the drainage pipe outlet on the upstream side of the bridge (permanent impact area F);
- Construction of the outlet for the vegetated swale on the downstream side of the bridge (permanent impact area A);
- Removal of the temporary work trestle (temporary impact area G);
- Removal of the bulkheads (temporary impact areas B, C, D and E); and
- Restoration of the bank impacted by the trestle and bulkheads (temporary impact areas B and D).

This permit application does not include work that has already been constructed, nor will it include removal of partially installed A-Jacks at Pier 2, installation of additional A-Jacks, or restoration of scour and deposition in the riverbed.

## SECTION 7 – RESOURCE-SPECIFIC CRITERIA HAVE BEEN MET

Env-Wt 400: Wetland boundaries and ordinary high water/top-of-bank of water courses located within the project area were delineated in September 2014 and confirmed in 2025. Wetlands and surface waters were classified using the USFWS (Cowardin et al.) Wetland Classification System. There are no Priority Resource Areas (PRA) within the project area. Based on the proposed linear feet of impacts to the Connecticut River channel and bank, the project is classified as a major impact project.

Env-Wt 500: The proposed project falls under Env-Wt 527 Public Highways. The proposed project has been designed in accordance with the criteria specified in Env-Wt 527.04 and is consistent with RSA 482-A:1, 483, 483-B, 485-A, and 212-A. The purpose of the proposed project is to improve safety by addressing geometric deficiencies and to preserve the structural integrity of the existing I-89 northbound and southbound bridges while maintaining this vital, high-volume transportation link between New Hampshire and Vermont

Env-Wt 600: N/A – There are no coastal or tidal wetlands located in the project area.

Env-Wt 700: N/A – There are no Designated Prime Wetlands within 100 feet of the proposed project.

Env-Wt 800: Mitigation has already been provided under NHDES File No. 2018-03001.

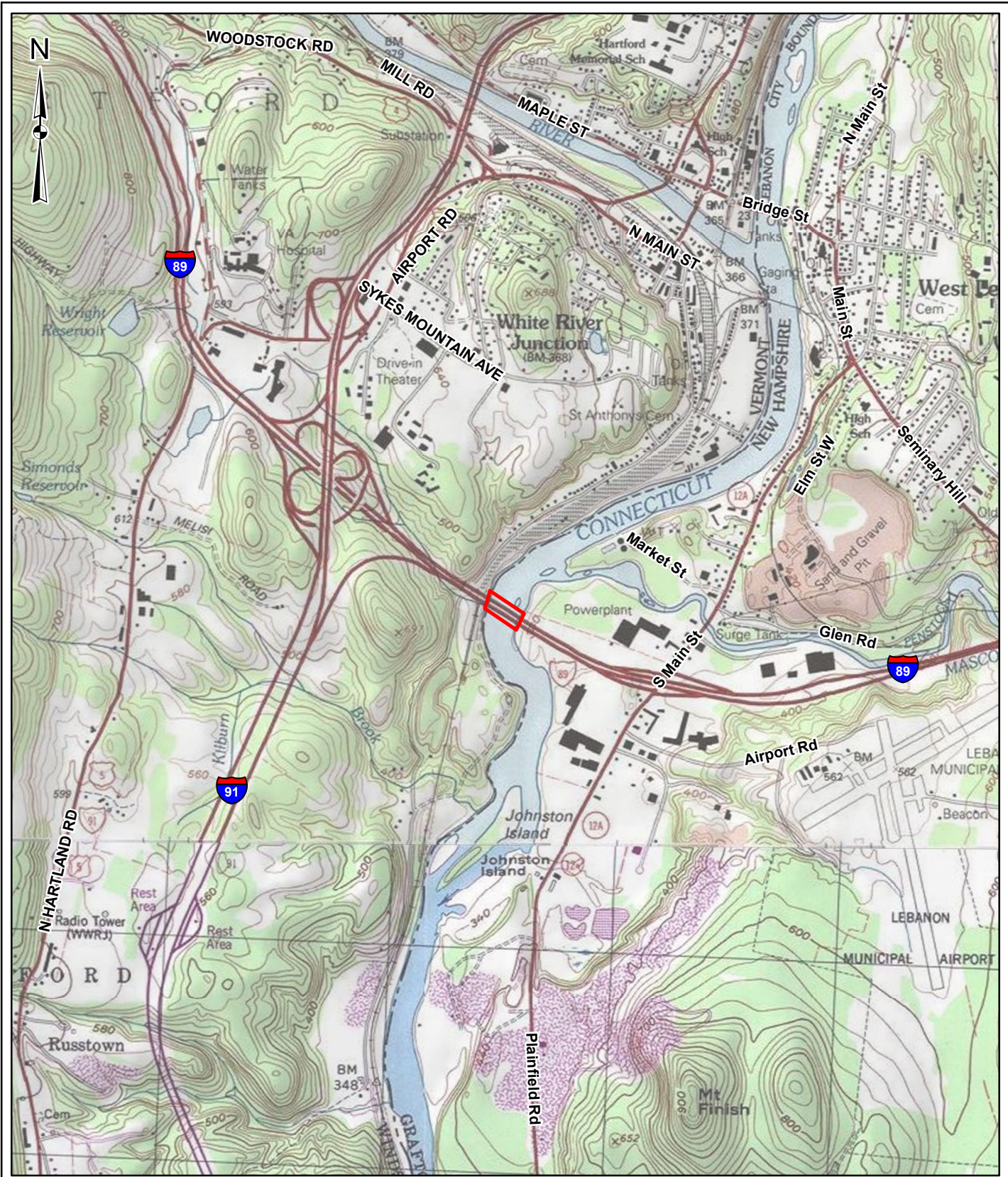
Env-Wt 900: Work will entail rehabilitation of existing Tier 3 stream crossing. Work will qualify for approval under Env-Wt 904.09, Repair, Rehabilitation or Replacement of existing Tier 3 and Tier 4 crossings.

#### **SECTION 10 – THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS**

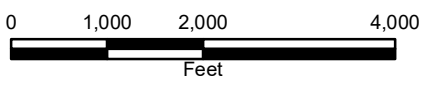
Mitigation for 217 linear feet of impacts to perennial stream channel and banks of the Connecticut River was previously provided through a payment to the NHDES Aquatic Resource Mitigation (ARM) Fund on September 4, 2020, in the amount of \$53,746.56. Additional compensatory mitigation is not included with this permit application.

## Figure 1 – USGS Location Map

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 Project Area



NH DEPARTMENT OF TRANSPORTATION  
I-89 BRIDGE REHABILITATION PROJECT

**USGS LOCATION MAP**

SCALE: 1 inch = 2,000 feet	DATE: JANUARY 2026	FIGURE: 1
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## Attachment A: Minor and Major Projects

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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:** NH Department of Transportation      **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.

DUE TO THE LOCATION OF THE I-89 BRIDGES ACROSS THE CONNECTICUT RIVER AND STRUCTURES ASSOCIATED WITH WORK COMPLETED DURING THE INITIAL PHASE OF THE REHABILITATION OF THE BRIDGES, THERE ARE LIMITED ALTERNATIVES FOR THE PROPOSED PROJECT. IMPACTS TO JURISDICTIONAL RESOURCE AREAS INCLUDING STREAM CHANNEL AND BANK HAVE BEEN AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. THERE THERE IS NO PRACTICABLE ALTERNATIVE THAT WOULD HAVE LESS ADVERSE IMPACT ON THE STREAM. THE WORK AS PROPOSED WILL REQUIRE TEMPORARY AND PERMANENT IMPACT ON STREAM BANK AND TEMPORARY IMPACT ON STREAM CHANNEL, RESULTING FROM THE CONSTRUCTION OF A STONE OUTLET PAD AND SWALE OUTLET AS WELL AS REMOVAL OF TEMPORARY TRESTLE AND BULKHEAD, AND RESTORATION OF BANK AFTER REMOVAL OF THESE STRUCTURES.

**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.

N/A - There are no marshes within 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.

The project will maintain hydrologic connections between adjacent wetlands and streams. Impacts are limited to a small portion of the channel and bank of the Connecticut River. The project will maintain pipe and drainage swales constructed during initial portion of project. A stone outlet pad is being installed to protect against scour and reduce erosion at the drainage outlet.

**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.

Please refer to the attached Supplemental Narrative to Attachement A Minor and Major Projects.

**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.

There will be no impacts to public commerce, navigation or recreation. The Connecticut River is used for recreational boating and fishing, and typical boats in the river range from canoes and kayaks to bass boats. A work trestle has been installed across the full width of the river, and construction activities limit access to certain areas along the banks and within the channel. However, boats will continue to be able to use the river through the project area during construction. Based on the typical types of boats that would likely be found on this section of the river, between six to eight feet of clearance is needed to pass under a structure. At least one section of the temporary trestle was constructed above the 10-year flood elevation. This provides adequate clearance for boaters during most flow conditions.

**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.

N/A - There are no floodplain wetlands within 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.

N/A - There are no riverine forested wetlands or scrub-shrub marsh wetlands 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.

This segment of the river is listed on the NHDES 2024 303(d) List for E. coli impairment to primary contact recreation, and mercury impairment to fish consumption. The project will not change the conditions responsible for these impairments.

Stormwater runoff from the pavement created by the bridge rehabilitation is being treated by a permanent treatment swale and infiltration basin installed during the initial portion of this project.

All appropriate erosion and sedimentation control measures during the remaining project activities will be utilized to avoid adverse impacts to water quality.

For these reasons, the project is not expected to impact overall water quality in the project area.

**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.

Temporary impact to the stream channel of the Connecticut River will result from removal of the temporary work trestle and bulkhead. The temporary impact will be a result of the removal of the 20" piles.

**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.

N/A - No shoreline structures are proposed

**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.

N/A - No shoreline structures are proposed

**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.

N/A - No shoreline structures are proposed

**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.

N/A - No shoreline structures are proposed

**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.

N/A - No shoreline structures are proposed

**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.

N/A - No shoreline structures are proposed

<b>PART II: FUNCTIONAL ASSESSMENT</b>	
<b>REQUIREMENTS</b>	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:	N/A
NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT:	N/A
DATE OF ASSESSMENT:	N/A
Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:	<input type="checkbox"/>
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:	<input type="checkbox"/>
<p>Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.</p>	

## **Supplemental Narrative to Attachment A Minor and Major Projects**

### **Section I.IV Jurisdictional Impacts**

Impacts have been avoided and minimized to the maximum extent practicable. The proposed project is not anticipated to impact any exemplary natural communities, vernal pools and/or habitat and reproduction areas for species of special concern. Measures will be implemented to avoid or minimize impacts to species of concern, as described in more detail below.

Appropriate Best Management Practices for soil erosion and sediment control will be installed throughout the duration of construction to minimize impacts on water quality related to work on the riverbank. The project has an approved 1,300-foot defined mixing zone to control discharge related to construction in the river. Turbidity will be monitored throughout construction.

The Connecticut River is Essential Fish Habitat (EFH) for Atlantic salmon. An EFH assessment was completed in 2014 and the National Marine Fisheries Service determined that the project would have minimal adverse effect on EFH and no conservation recommendations were provided.

The NH Department of Environmental Services Ecological Review Section has records of the following State listed species in the vicinity of the project: incurved umbrella sedge, bald eagle, eastern meadowlark, and peregrine falcon.

Incurved umbrella sedge occurs in the sand of river shores. It was confirmed with the Ecological Review Section that none of the proposed impact areas contain exposed sandy soil, and this species is unlikely to occur within the project area. There are no further concerns regarding impacts to this species. Documentation is included elsewhere in the application package.

Bald eagles require large open bodies of water with nearby large trees for perching and nesting. There are no large trees within the project study area and the remaining work will not require cutting trees.

Eastern meadowlarks require large open grasslands. There is no suitable habitat within the project area.

Peregrine falcons require tall cliffs or structures for nesting, often near water. There were no known peregrine falcon nesting sites in the project area prior to the start of construction.

Bridge construction activities have been ongoing since 2020 and there have been no reports of falcon activity at the bridges during that time.

A NHDES Wildlife Ecological review was completed on February 10, 2026. The NHDES Ecological Review Section has no further concerns regarding impacts to bald eagles or eastern meadowlark, however, provided the conservation measures listed below for peregrine falcon to be included in contract documents. Documentation is included elsewhere in the application package.

1. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided with NHFG approved flyers that help to identify these species, along with NHFG biologist contact information. Approved Protected Species Flyers are provided on the NHFG website.
  - a. Peregrine falcon occur within the vicinity of the project area. All operations and personnel working on or entering the site will be made aware of the potential presence of this species and flyers will be available to help identify this species, along with NHFG contact information. Additionally, peregrine falcon information shall be communicated if/when weekly project progress meetings are held on site.
  - b. If a nest is observed on the bridge, project activities shall cease until further instruction by NHFG is provided. See Species Flyers for NHFG biologist contact information.
2. Any remaining work to the bridge structure (if proposed) should occur between July 16th and March 14th to avoid the breeding season for Peregrine falcon. If work on the bridge must occur during the breeding season, contractors shall be made aware of the potential presence of this species and visually check for nests and nesting materials, particularly on ledges underneath the bridge.
3. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov), with the email subject line containing the DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible.

4. In the event a protected species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with and implementation of corrective actions recommended by NHFG.
5. The NHDES Ecological Review Section, including its employees and authorized agents, shall have access to the project site during the term of the permit. The NHDOT Contract Administrator or Environmental Coordinator for the project shall be contacted in advance to coordinate safe access to the site. In case of the need for emergency site access, NHFG may contact Kevin Nyhan at 603-271-3226.

The USFWS Information, Planning and Conservation System (IPaC) web tool was utilized to determine if federally listed species have the potential to occur in the project area. According to IPaC, the endangered northern long-eared bat, proposed endangered tricolored bat, proposed threatened monarch butterfly, and endangered Jesup's milk-vetch are potential concerns in this region.

No tree clearing is required for the proposed work, and bridge work has been continuous since the start of construction; therefore, a new bat-bridge assessment will not be required. The USFWS January 14, 2026 Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (D Key) was completed, resulting in a determination of may affect – not likely to adversely affect. Documentation is included elsewhere in the application package. Pertinent Avoidance and Minimization Measures (AMMs) include: 1.) Drilling or blasting producing noise or vibrations above existing background levels that affects suitable summer habitat for northern long-eared bat and tricolored bat, shall not occur during the Summer Occupancy season (Apr 15 – Sept 30); 2.) Any permanent or temporary artificial lighting that is used within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat shall be directed away from the forested habitat.

*Astragalus robbinsii* var. *jesupii* is reported only to grow on rocky shores of the Connecticut River composed of phyllite or chlorite schist. Like other members of the *Astragalus robbinsii* complex, this variety is associated with rock that is rich in calcium and magnesium (U.S. Fish and Wildlife Service 1989, NatureServe 2001). The plants occur on moderately steep bedrock slopes that face east or southwest, in crevices and shelves where some litter and sediment has been deposited. The river shores where this plant can be found are periodically scoured by ice breaking up and floating down the Connecticut River in spring; thus, plants are sparse and few species that cannot tolerate such disturbance are present. Suitable habitat for Jesup's milk-vetch does not occur within the areas of proposed impacts. The only proposed impacts are in or adjacent to already disturbed areas, none of which include exposed or scoured bedrock. Banks are heavily vegetated with sandy/gravelly/rocky soils and bedrock geology maps do not show any chlorite or phyllite schist in this area. Informal

consultation with the USFWS was initiated on January 28, 2026 to request concurrence on a determination of Not Likely to Adversely Affect. Documentation is included elsewhere in the application package.

The project as proposed will not obstruct aquatic organism passage during construction or following completion. Large portions of the channel will remain passable throughout construction. Wildlife passage can currently take place along the NH bank where an access road travels under the bridge. The road will remain following construction.

## NHDES Avoidance and Minimization Checklist

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**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.: <b>New Hampshire Department of Transportation</b>		
PROJECT STREET ADDRESS: <b>I-89 over the Connecticut River</b>	PROJECT TOWN: <b>Lebanon</b>	
TAX MAP/LOT NUMBER: <b>N/A</b>		
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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>If you answered “no” to this question, describe the purpose of the “non-access” project type you have proposed:</p> <p>This permit is for the remaining work previously authorized under NHDES File No. 2018-03001, involving the rehabilitation of the I-89 bridges (Bridge No. 044/104 (N.B.) and Bridge No. 044/103 (S.B.)), over the Connecticut River between Lebanon, NH and Hartford, VT. The work entails the construction of a drainage swale and pipe outlet as well as the removal of work trestle and temporary bulkheads on the NH bank. Bank will be restored after removal of bulkheads.</p>		

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

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

[www.des.nh.gov](http://www.des.nh.gov)

<b>SECTION 3 - A/M PROJECT DESIGN TECHNIQUES</b>		
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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> 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.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A

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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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
<b>SECTION 4 - NON-TIDAL SHORELINE STRUCTURES</b>		
Env-Wt 313.03(c)(1)	The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A

## NHDOT Natural Resource Agency Coordination Meeting Minutes

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## MEETING NOTES

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**PROJECT:** LEBANON, NH – HARTFORD, VT 16148      **DATE OF MEETING:** August 15, 2018  
(MJ Project No: 17732.01)

**LOCATION:** NHDOT – Bureau of Environment

**SUBJECT:** NHDOT Natural Resource Agency Coordination Meeting – DRAFT minutes

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### PROJECT REPRESENTATIVES:

NHDOT: Samantha Fifield, Marc Laurin

MJ: Brian Colburn, Christine Perron

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### NOTES ON MEETING:

This project involves the rehabilitation and widening of the Interstate 89 bridges over the Connecticut River between Lebanon, NH and Hartford, VT. The project was last reviewed at this meeting in February 2017. The purpose of today's meeting is to review proposed impacts and mitigation once more before permit applications are submitted.

Brian Colburn provided an overview of the project. The existing superstructure steel will be replaced with new steel and an in-fill will be constructed in the gap between the bridges to provide a single 110'+/- wide bridge deck to facilitate traffic control. The in-fill will require new footings between each of the five pairs of existing piers, four of which are located in the river. The resulting bridge will allow for maintenance of traffic during phased construction. Following construction, the bridge will provide two through lanes in each direction and auxiliary lanes between Exit 20 and I-91 ramps.

Three stormwater treatment areas will be constructed to treat runoff. Work as proposed will result in a net increase of approximately 0.9 acres of impervious surface in New Hampshire and 0.5 acres in Vermont. A proposed treatment swale and infiltration basin in New Hampshire will treat runoff from approximately 2.82 acres of pavement. An infiltration basin proposed in Vermont will collect and treat runoff from approximately 2.04 acres of pavement. For the overall project, there would be approximately 4.86 acres of pavement treated, compared with an increase of 1.4 acres of new impervious surface.

Two piers require scour protection. The first, easternmost pier does not experience scour and the fourth, westernmost pier in the river is located on bedrock; therefore, these two piers do not need scour protection. A-Jacks concrete armor units are proposed for the two piers in the center of the river. Mats of these interlocking units would be constructed on land or a barge and then lowered by crane to the river bottom around each pier. The mats would be placed on top of the channel substrate. Since no excavation or placement of bedding materials will be required for the A-Jacks, the use of cofferdams will be limited to the

footprint of the new pier footings. The existing piers have been experiencing scour, and scour protection would be necessary even if new footings were not proposed.

Due to the new piers and scour protection, the work as proposed would result in a slight increase in base flood elevation. Mitigation will be incorporated into the project to eliminate this increase. Proposed mitigation will entail benching into the VT bank to create a narrow shelf, staying approximately 1' above ordinary high water.

A work trestle across the full width of the Connecticut River will likely be needed for construction. To provide flexibility to the Contractor in locating the temporary construction trestle, a large footprint of temporary impact will be included in the permit application to accommodate an upstream or downstream trestle with extensions to the middle of the bridge to access each pier. This large footprint eliminates the need to show the location of every trestle pile. Actual temporary impacts within this large footprint would be limited to the trestle piles, which would total approximately 600 sq ft.

A temporary causeway/work platform would be needed off each bank of the river to provide a platform from which the trestle would be constructed. A small work platform will also be needed under the bridge between the NH bank and first pier. The trestle and causeways would be in place for the duration of construction, which is expected to be up to four years. The Contractor will only be allowed to build one trestle, either upstream or downstream of the bridge, so only 3 of the 5 causeways would be constructed (one for pier access, two for the trestle).

Christine Perron provided a summary of proposed impacts:

Permanent wetland impacts: There will be no wetland impacts in NH.

Permanent bank impacts from drainage work: 623 sq ft (59 linear ft)

Permanent channel impacts from the new footings: 3,117 sq ft (158 linear feet)

Permanent channel impacts from scour protection: 20,895 sq ft (286 linear feet)

Temporary impacts from causeways: 6,710 sq ft (213 linear feet)

Temporary impacts from trestle/construction footprint: 87,289 sq ft (Actual impacts from the trestle would be limited to the piles that support the trestle, which would be a total of approximately 600 sq ft.)

Total permanent: 24,635 sq ft (503 linear feet)

Total temporary: 95,147 sq ft (565 linear feet)

Temporary impacts to Vermont side of the river: 385 sq ft

C. Perron noted that she had coordinated with Mike Hicks and his counterpart in Vermont (Mike Adams) last year regarding Section 404/10 permitting. The total area of proposed temporary and permanent fill in the navigable waterway is approximately 0.72 acre in NH and 385 sq ft in VT. Since these impacts are below each State's threshold for an Individual Permit for work in navigable waters, and because there have been no public concerns raised about the project, Mike Hicks and Mike Adams indicated that the project could be authorized under each State's general permit. M. Hicks confirmed that the project would be authorized under the NH GP.

Impacts requiring mitigation were reviewed. Permanent impacts from the new pier footings (158 linear feet) and drainage work (59 linear feet) will require mitigation. Permanent impacts from scour protection (286 linear feet) were discussed. At a previous meeting, there had been consensus that the scour protection would not require mitigation since it would be protecting existing infrastructure. However, there was now concern over whether the scour protection would be protecting new or existing

infrastructure since each location of proposed A-Jacks would encompass two existing piers and one new middle pier. B. Colburn clarified that there is an existing scour concern at the existing piers, that the proposed work was not causing the scour concern, and that the scour protection would be needed in the same footprint as proposed even if the new pier footings were not proposed. Based on this discussion, there was agreement that mitigation would not be required for the scour protection. G. Infascelli noted that the permit application should clearly describe why scour protection is proposed.

The need to mitigate for temporary impacts from the proposed causeways was discussed. At the last meeting, Lori Sommer had suggested contacting Mike Johnson (National Marine Fisheries Service) about mitigation for the temporary causeways since they would be in place for up to 4 years. Mike Johnson was contacted and suggested that mitigation for the proposed causeways would be consistent with the Sarah Mildred Long project, which provided mitigation for impacts from a temporary causeway. However, DOT has concerns with requiring mitigation for the Connecticut River causeways. First, the Sarah Mildred Long causeway resulted in impacts to tidal wetlands, which would be more sensitive to changes in hydrology over a period of time, and impacts from small causeways along the banks of the Connecticut are not directly comparable. Second, Mike Johnson had previously reviewed the project through EFH consultation in 2014 and had no concerns with the project at that time, and now the Connecticut River is no longer subject to EFH consultations. Finally, the causeways will consist of stone fill placed within sheet piles and on geotextile fabric to minimize their footprint and disturbance to the streambed. The sizes of the causeways have been minimized and they will extend only 25' to 40' out from the bank. The causeways will be located in areas that were likely impacted by construction of the existing interstate bridges. Any effects to the river, which is 550' in width, would be minimal. All stone fill from the causeways will be removed following construction.

Mark Kern expressed some concern over impacts to aquatic habitat, such as compaction or other changes to the substrate, due to the amount of time the causeways would be in place and the time it would take for the habitat to recover. However, Carol Henderson noted that NH Fish & Game does not have concerns with impacts to the substrate. L. Sommer, M. Hicks, and M. Kern agreed that no mitigation for the temporary causeways would be required.

DOT has reached out to the Lebanon Conservation Commission and Upper Valley Land Trust for input on mitigation options. If no suitable projects are identified, then mitigation will be in the form of an in-lieu fee payment of \$53,746.56.

M. Hicks asked about coordination on the Coast Guard Bridge Permit and northern long-eared bat consultation. C. Perron responded that the US Coast Guard has concurred that the project is exempt from a Bridge Permit under Section 144(h), and that the project is federally funded and was reviewed under the Programmatic Consultation for northern long-eared bat.

The permit application will be submitted in approximately one month. The tentative advertising date for the project is June 2019, with the start of construction expected to be just over a year from now.

Submitted by:

Christine Perron  
McFarland Johnson, Inc.

*Note: Finalized minutes and the complete list of attendees will be available in the Conference Report for the August 15, Natural Resource Agency Coordination Meeting.*

# BUREAU OF ENVIRONMENT CONFERENCE REPORT

**SUBJECT:** NHDOT Monthly Natural Resource Agency Coordination Meeting

**DATE OF CONFERENCE:** February 15<sup>th</sup>, 2017

**LOCATION OF CONFERENCE:** John O. Morton Building

**ATTENDED BY:**

**NHDOT**

Sarah Large  
Ron Crickard  
Mark Hemmerlein  
David Kammer  
Marc Laurin  
Kevin Nyhan  
Rebecca Martin  
Jon Evans  
Steve Johnson  
Cassandra Burns  
Stephanie Micucci  
Bill Saffian  
Sally Gunn  
Don Lyford  
Shaun Flynn  
Samantha Fifield  
C.R. Willkie  
Joseph Adams  
Michael Licciardi  
Jon Hebert

Wendy Johnson  
Bob Landry

**EPA**

Mark Kern

**NHDES**

Gino Infascelli  
Lori Sommer  
Pierce Rigrod

**NHF&G**

Carol Henderson  
John Magee

**NH Natural Heritage**

**Bureau**  
Amy Lamb

**Consultants/Public  
Participants**

Dawn Tuomala  
Jim Bouchard  
Lisa Martin  
Don Lussier  
John Parrelli  
Josif Bicja  
Kimberly Peace  
Sean James  
Brad Harriman  
Christine Perron  
Brian Colburn  
Matt Lundsted  
Clint Mercer  
David Kull  
Jed Merrow

*(When viewing these minutes online, click on an attendee to send an e-mail)*

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**Lebanon-Hartford, #16148 (A001(154))**

This project was last reviewed at this meeting a year ago. Final design of the project has been progressing and permit applications are now being prepared. The purpose of today's meeting is to discuss proposed impacts and get concurrence on mitigation requirements.

Brian Colburn provided an overview of the project, which consists of the rehabilitation of the Interstate 89 bridges over the Connecticut River between Lebanon, NH and Hartford, VT (Bridges 044/103 and 044/104). The existing superstructure steel will be replaced with new steel and an in-fill will be constructed in the gap between the bridges to provide a single 110' +/- wide bridge deck to facilitate traffic control. The in-fill will require new footings between each of the five pairs of existing piers, four of which are located in the river. The resulting bridge will allow for maintenance of traffic during phased construction. Following construction, the bridge will provide two through lanes in each direction and auxiliary lanes between Exit 20 and I-91 ramps. Three stormwater treatment areas will be constructed to treat runoff. Infiltration basins will be located on the north side of the interstate in both NH and VT, and a treatment swale will be located on the south side of the interstate in NH.

Three piers require scour protection. The fourth, westernmost pier in the river is located on bedrock and does not need scour protection. A-Jacks concrete armor units are proposed for the three piers. Mats of these interlocking units would be constructed on land or a barge and then lowered by crane to the river bottom around each pier. The mats would be placed on top of the channel substrate. Since no excavation or placement of bedding materials will be required for the A-Jacks, the use of cofferdams will be limited to the footprint of the new pier footings.

Due to the new piers and scour protection, the work as proposed would result in an increase in base flood elevation of 0.04'. Since this area does have a history of flooding during 100-year storm events, mitigation will be incorporated into the project to avoid any increase in base flood elevation. Proposed mitigation will entail benching into the VT bank to create a narrow shelf, staying approximately 1' above ordinary high water. To achieve a zero increase in flood elevation, the bank will be benched along a distance of 388 feet. Stone will be placed to stabilize the new slope. Much of this area is located under the bridges and is currently stone. When this project was last discussed with the resource agencies, benching along the NH bank was discussed. It has since been determined that benching on this side of the river would require dredging in the river or cutting into a larger area of bank to achieve a zero increase in flood elevation. The VT bank is steeper and more conducive to benching. The bench will also provide some benefit to wildlife traversing the steep bank.

When reviewing the profile view of the proposed benching, Gino Infascelli commented that it would be helpful to include the location of the State line and OHW on all profile views to more clearly show where impacts are located.

To provide flexibility to the Contractor in locating a temporary construction trestle, a large footprint of temporary impact will be included in the permit application and a work trestle across the full width of the Connecticut River is assumed. Fingers off the main trestle would be needed to access each pier. A temporary causeway/work platform would be needed off each bank of the river to provide a platform from which the trestle would be constructed. A small work platform may also be needed under the bridge between the NH bank and first pier. The trestle and causeways would be in place for the duration of construction, which is expected to be up to four years. The Contract could provide an upper limit of the number of trestle piles that would be allowed. The Contractor will also be given the option to access the Vermont pier from the Vermont side of the river; however, this option will require a temporary railroad crossing, which could become costly due to flagger and insurance requirements. If the Contractor chooses this option, a portion of the trestle would not be needed.

Based on the typical types of boats that would likely be found on this section of the river, between six to eight feet of clearance is needed to pass under a structure. The elevation of ordinary high water in this location is 331' and the 10-year event is 342'. There will be a stipulation in the contract that the Contractor must construct at least one section of the temporary trestle above the elevation of the 10-year event. This would provide adequate clearance for boaters during most flow conditions.

Christine Perron provided a summary of proposed impacts. These totals may change slightly as areas are refined on the wetland impact plans.

Permanent wetland impacts: 1,101 sq ft  
 Permanent bank impacts from drainage work: 599 sq ft  
 Permanent channel impacts from the new footings: 3,118 sq ft  
 Permanent channel impacts from scour protection: 20,559 sq ft  
 Temporary impacts from causeways: 5,901 sq ft  
 Temporary impacts from trestle/construction footprint: 88,999 sq ft (Actual impacts from the trestle would be limited to the piles that support the trestle, which would be a total of approximately 600 sq ft.)  
 Total permanent: 25,377 sq ft  
 Total temporary: 94,900 sq ft  
 Temporary impacts to Vermont side of the river: 802 sq ft

C. Perron noted that she has been coordinating with Mike Hicks regarding Section 404/10 permitting. The total area of proposed temporary and permanent fill in the navigable waterway is approximately 0.69 acre in NH and 802 sq ft in VT. Since these impacts are below each State's threshold for an Individual Permit for work in navigable waters, and because there have been no public concerns raised about the project, M. Hicks has confirmed that the project can be authorized under each State's general permit. Mike Adams of the Corps confirmed that the application for VT impacts should be sent to the Vermont office.

Impacts requiring mitigation were reviewed. Permanent impacts from the new footings (158 linear feet) and drainage work (50 linear feet) will require mitigation. Permanent palustrine wetland impacts (1,100 sq ft) will also require mitigation. The temporary impacts from the causeways may also require mitigation since these will be in place for up to 4 years. Since the river is designated as Essential Fish Habitat, Lori Sommer asked that Mike Johnson be contacted for input on the need for providing mitigation for the temporary causeways. Subsequent to the meeting, C. Perron contacted M. Johnson, and he requested that the NOAA Habitat Equivalency Analysis be used to determine the appropriate area to mitigate for temporary habitat loss from the causeways. The Sarah Mildred Long bridge project constructed a causeway that will be in place for three years. A recovery time of 3 years was used for this impact. Using this example, mitigation for the proposed causeway impacts in the Connecticut River would need to account for the duration of construction (4 years) plus full recovery time (3 years).

The Department's preference for mitigation is an in-lieu fee payment. L. Sommer asked that the City of Lebanon and Upper Valley Land Trust be contacted to determine if there are any appropriate projects that could be funded as mitigation. Following this coordination and the completion of the Habitat Equivalency Analysis, a mitigation proposal will be confirmed with DES. The in-lieu fee should be determined by using the DES stream calculator for linear feet of impact to the river and banks and the wetland calculator for square feet of impact to palustrine wetlands.

Carol Henderson asked if Mike Johnson was already aware of the proposed scour protection. C. Perron clarified that the scour protection had been included in the EFH Assessment that M. Johnson approved two years ago. The temporary causeways were not previously reviewed by M. Johnson.

Other resources were reviewed. Dwarf wedgemussels occur one mile downstream of the project and the USFWS had no concerns regarding this species when contacted in 2013.. Subsequent to the meeting, the USFWS confirmed that there are still no concerns regarding this species. Time of year restrictions will be implemented for tree clearing to avoid potential impacts to northern long-eared bat. The bridge was reviewed with binoculars for signs of bat usage, and close-up bridge inspection photographs of the bridge were also reviewed. No evidence of roosting has been observed. There are no known maternity roost trees or hibernacula in the vicinity of the project. A Project Submittal Form has been sent to USFWS by NHDOT with a finding of May Effect, Not Likley to Adversely Affect. The project was reviewed with NH Fish & Game and there were no concerns regarding bald eagle or cobblestone tiger beetle. Section 106 consultation has resulted in a determination of No Historic Properties Affected. The US Coast Guard has concurred that the project is exempt from a Bridge Permit under Section 144(h).

M. Hicks asked if there is a local harbor master or similar entity for this area that could be notified about impacts to recreational boating during construction. The Connecticut River Joint Commissions is aware of the project and will receive a copy of the permit application. M. Hicks also asked about the substrate of the river, which is predominantly sand and gravel at the bridge site. M. Hicks asked about public input received on the project. There has been one Public Officials Meeting with Lebanon City Officials and a Public Informational Meeting. Letters have also been sent to Lebanon and Hartford boards and organizations. No concerns about the project have been raised.

A survey for the state listed mudflat spikesedge was completed in October 2015 and the plant was not found in the project area. Amy Lamb noted that a number of new occurrences of this species were located along the river during the recent drought when the water level was lower than normal. She recommended checking the project area again for this plant if the water levels remain low enough.

The permit application is expected to be submitted to DES in late April.

*This project has been previously discussed at the 5/21/2014, 11/19/2014, and 2/17/2016 Monthly Natural Resource Agency Coordination Meetings.*

### **Walpole-Charlestown, #14747 (X-A004(487))**

Jon Evans began by providing a brief overview of the project's history to date and that the project had been reviewed at several prior meetings with the last being March 16, 2016. J. Evans also noted that the goal of this meeting was to review current estimated wetland impacts and determine USACE permitting needs. Matt Lundsted took over by running through a short presentation summarizing that the current proposed alternative (western alignment shift away from the railroad and Fall Mountain) removes physical impacts to the railroad tracks (property encroachment only), minimizes environmental impacts from blasting, avoids the rock cut and tree clearing to the east of the railroad, eliminates impacts to Fall Mountain State Forest and cuts construction costs and duration.

The presentation went on to outline typicals of what the slope work along the banks of the Connecticut River and Meany's Cove would look like detailing specific cross sections at three stations (one in the southern portion of the project into the Connecticut River, one through the Meany's Cove segment and one in the northern portion of the project into the Connecticut River). Finally permanent and temporary wetland and bank impacts in each community were summarized.

Lori Sommer inquired what the intent of the "potential construction platform" was for. Clint Mercer explained that the slope work to the southern end of the project is too high to construct from the top of

# BUREAU OF ENVIRONMENT CONFERENCE REPORT

**SUBJECT:** NHDOT Monthly Natural Resource Agency Coordination Meeting

**DATE OF CONFERENCE:** February 17, 2016

**LOCATION OF CONFERENCE:** John O. Morton Building

**ATTENDED BY:**

**NHDOT**

Matt Urban  
Ron Crickard  
Anthony Weatherbee  
Kerry Ryan  
Marc Laurin  
Sam Fifield  
Joe Adams  
Carol Niewola  
Jon Evans  
Bob Juliano  
Mike Dugas  
Keith Cota

**Army Corps of Engineers**

Michael Hicks

**NHDES**

Gino Infascelli  
Lori Sommer  
Katie Zink  
Greg Cummings  
Deb Loiselle

**NH Fish & Game**

Carol Henderson

**NHB/DRED**

Amy Lamb

**Consultants/Public  
Participants**

Jed Merrow  
David Nelson  
Christine Perron  
Rick Dymont  
Brian Colburn  
Josh Lund  
Rob Faulkner  
Bill Ashford  
David McNamara  
Vicki Chase  
Jennifer Riordan  
John Trottier  
Chris Bean  
Ian Broadwater  
Mark Hutchins  
Leo Tidd

**PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:**

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*(When viewing these minutes online, click on a project to zoom to the minutes for that project)*

decrease in impervious surface. Stub taxiways between Taxiway B and the runway may be relocated. There will be minor drainage improvements but no change in drainage patterns or infrastructure. There is an ongoing erosion problem north of the Runway 18 end that should be addressed. If excess material is available from the taxiway project, it could perhaps be used to fill in the erosional area. The erosional area has groundwater seepage, intermittent channels, and delineated wetlands. Stone fill may be the best solution for this area. Other areas to stockpile excess material (if any) have not yet been identified, but could be on airport property.

There are four small pocket wetlands, estimated at 6,000 square feet but later determined to be 8,323 square feet overall, between the east end of Taxiway B and Runway 7-25. The taxiway rehabilitation work may result in the filling of these wetlands. Lori Sommer noted that, since the proposed work will occur within 5 years of previous wetland impact projects at the airport, mitigation for the proposed project will be required for cumulative wetland impacts. An in-lieu fee would be the most likely form of mitigation. The airport will set up a meeting with the Lebanon Conservation Commission to discuss impacts and mitigation during the design and permitting process.

Based on the former runway safety area project work, there are two state-threatened plant species in the vicinity. Fringed gentian has been found on airport property, and barren strawberry has been found nearby. An updated rare species query needs to be submitted to the Natural Heritage Bureau. It may be necessary to check for these plants within the impact area prior to construction.

As this is still being designed, Gino Infascelli noted that the grading plans must show why there is a need for impacting the infield wetlands.

The project is planned to be advertised for construction bids in April, and permits should be obtained by May 1. The state dredge and fill application will need to be submitted as soon as possible to meet the schedule.

### **Lebanon-Hartford, 16148, A001(154)**

Brian Colburn provided an overview of the project, which consists of the rehabilitation of the Interstate 89 bridges over the Connecticut River between Lebanon, NH and Hartford, VT (Bridges 044/103 and 044/104). The existing superstructure steel will be replaced with new steel and an in-fill will be constructed in the gap between the bridges to provide a single 110' +/- wide bridge deck to facilitate traffic control. The in-fill will require new footings between each of the four pairs of existing piers. The resulting bridge will provide 2 through lanes in each direction and auxiliary lanes between Exit 20 and I-91 ramps, and will require realignment of I-89 on both approaches.

Construction access issues were summarized. Construction access to the western-most bridge pier could be achieved from Connecticut River Road with an access road built along the railroad, beginning at a point where Connecticut River Road and the railroad are at the same elevation, approximately 600 feet north of the bridge. Much of this access road could be constructed by bringing in fill material. A temporary crossing of the railroad would be required. This option would require coordination with the railroad, which sees daily passage of freight and passenger trains, and this coordination can become costly due to flagger and insurance requirements.

A second option to access the westernmost pier is from the New Hampshire side of the river. This option would involve constructing a work trestle across the full width of the Connecticut River. The Contractor would have the option of placing this trestle on either the upstream or downstream side of the bridge. Fingers off the main trestle would be needed to access each pier. A temporary causeway would be needed off each bank of the river to provide a platform from which the trestle would be constructed. The trestle would be in place for the duration of construction, which is expected to be approximately three years.

Based on available information, it appears the portages in this area of the river are for car-top access such as canoes and kayaks. The State of Oregon *Minimum Channel Clearance Guidelines for Recreational Boating* was located online and provides minimum height clearances for typical boat types. Based on the typical types of boats that would likely be found on this section of the river, between six to eight feet of clearance is needed to pass under a structure. The elevation of ordinary high water in this location is 331' and the 10-year event is 342'. There will be a stipulation in the contract that the Contractor must construct at least one section of the temporary trestle above the elevation of the 10-year event. This would provide adequate clearance for boaters during most flow conditions.

Carol Henderson commented that this section of the river may be used for bass fishing, which involves boats larger than a canoe or kayak. Based on the minimum clearances in the Oregon guidance, the trestle as proposed would provide adequate clearance for boats up to 27' in length. It was agreed that this would be adequate for bass boats.

Josh Lund provided an overview of proposed scour protection measures. Three of the four piers require scour protection. The fourth, westernmost pier is located on bedrock and does not need scour protection. A-Jacks concrete armor units are proposed for the three piers. Mats of these interlocking units would be constructed on land or a barge and then lowered by crane to the river bottom around each pier. The mats would be placed on top of the channel substrate, with no excavation or placement of bedding materials required. The work would be facilitated by divers.

Due to the new piers and scour protection, the work as proposed would result in an increase in base flood elevation of 0.05'. To compensate for this increase in flood elevation, bank cuts are proposed in order to widen the capacity of the river during flood events and create a zero increase in flood elevation. This would entail cutting into the river bank to create a narrow shelf, staying about one foot above ordinary high water. The bank cut could also make it easier for wildlife to traverse the river banks under the bridges. This floodplain mitigation could be achieved with a bank cut entirely on the Vermont bank, or a combination of the NH and VT banks. As shown on the plans for purposes of discussion, the bank cut extends the width of the right-of-way, which is approximately 432 linear feet of bank. From a wildlife passage perspective, the bank cut would have more value on the Vermont bank, which is steeper and higher than the NH side.

Christine Perron provided an overview of preliminary wetland impacts:

Permanent channel impacts from the new footings: 3,119 sq ft

Permanent channel impacts from scour protection: 17,498 sq ft

Permanent bank impacts from floodplain mitigation ("worst case" scenario): 3,508 sq ft (432 LF)

Permanent palustrine wetland impacts (NH): 1,531 sq ft

Temporary impacts: overall footprint to be permitted will be 92,706 sq ft. This includes 3,800 sq ft for 3 areas of temporary causeway, plus adequate area to allow contractor to choose where to construct the trestle. Actual impacts from the trestle would be limited to the piles that support the trestle, which would be a total of approximately 600 sq ft.

The project will require a NH Dredge & Fill Permit, which will be classified as a major impact permit since this is a Tier 3 stream crossing. In addition, the project will require a permit from the Army Corps, a

Shoreland Permit by Notification, a VT River Corridor Permit, and VT Stormwater Discharge Permit. Additional federal approvals were reviewed. The US Coast Guard has concurred that the project is exempt from a Bridge Permit under Section 144(h). The Coast Guard is requiring coordination just prior to construction to review construction plans. Mike Johnson from the National Marine Fisheries Service reviewed the project a year ago and had no concerns regarding Essential Fish Habitat. However, the scour protection measures were not known when the EFH Assessment was completed, so additional coordination with NMFS will be necessary. Dwarf wedgemussels occur one mile downstream of the project; the USFWS has no concerns regarding this species. Northern long-eared bat may occur in the area. This species will be addressed in the coming months as limits of tree clearing become better defined. Finally, Section 106 consultation has been underway. There are three areas of archaeological sensitivity on the VT side of the project area. Only one of these areas may be impacted for construction access, and a survey will be completed in the spring to determine if the area contains significant resources. There are no historical or archaeological resource concerns on the NH side of the project. A determination of No Historic Properties Affected is anticipated for the overall project, pending the results of the archaeological survey.

Regarding the Army Corps Section 404/Section 10 Permit, C. Perron noted that the impact threshold for an Individual Permit for work in navigable waters in NH is 1 acre. The project as proposed will result in approximately 0.56 acres of impact from permanent and temporary fills, so the project may qualify for the NH General Permit. This total includes impacts from the new footings, scour protections, and temporary causeways. Impacts within the VT-owned portion of the river have not been quantified yet, although it is anticipated that VT impacts will only be temporary in nature and would qualify for authorization under the VT General Permit. The US Route 4 bridge replacement project that was completed a few miles upstream was covered by both the VT and NH General Permits.

Mike Hicks commented that the thresholds in the General Permits are advisory only. Other factors need to be taken into consideration as well when determining the need for an Individual Permit, such as public concerns and the concerns of other resource agencies. He needed to consider the project further before making a determination on permit requirements. B. Colburn noted that the project has been presented to town officials of Lebanon and Hartford, as well as the general public, and no concerns with the project have been raised.

M. Hicks asked if the need for a Section 408 permit had already been determined. C. Perron replied that she has an email from the Army Corps that states the 408 permit would not be needed. She would forward the email to Mike.

C. Perron asked for input on mitigation requirements that will need to be taken into consideration as impacts are finalized. She noted that it was assumed that the permanent channel impacts from the new footings would require mitigation, and it was also assumed that impacts from scour protection would not require mitigation since the impacts were necessary for the protection of existing infrastructure. Both L. Sommer and Gino Infascelli concurred. Regarding the impacts from proposed bank cuts, C. Perron noted that it was hoped that wetland mitigation would not be required since these impacts were proposed only for floodplain mitigation. L. Sommer and G. Infascelli did not agree with this and commented that mitigation for linear bank impacts would be required. In addition, mitigation will also be required for the temporary impacts resulting from the proposed causeways.

G. Infascelli asked that other options be explored for floodplain mitigation to determine if feasible alternatives to the bank cutting concept exist. L. Sommer noted if the bank cutting concept is carried forward, her preference would be to limit the impacts to one bank rather than impact both banks. In general, there are concerns regarding the bank cutting concept. C. Perron noted that the concept will be discussed with VT resource agencies to get additional feedback.

M. Hicks suggested that a site visit with agencies from both states would be beneficial. This could be scheduled in the spring. Based on the current project schedule, permit applications will be submitted in mid-summer of this year. It is anticipated that the project will be discussed at least once more at a Natural Resource Agency Meeting prior to application submittal.

### **Northfield-Tilton, 16147&14744A, X-A001(153) & A001(042)**

This project involves rehabilitation and pier scour protection for two bridges carrying I-93 over the Winnepesaukee River in Tilton and Northfield. The two projects will be advertised as one contract. Vicki Chase introduced the project, which is located just south of Exit 20 on I-93. The subject bridges cross over the Winnepesaukee River and the New Hampshire Railroad. The existing bridges which were built in 1960 and reconstructed in 1980.

V. Chase provided an overview of existing natural resources at the site.

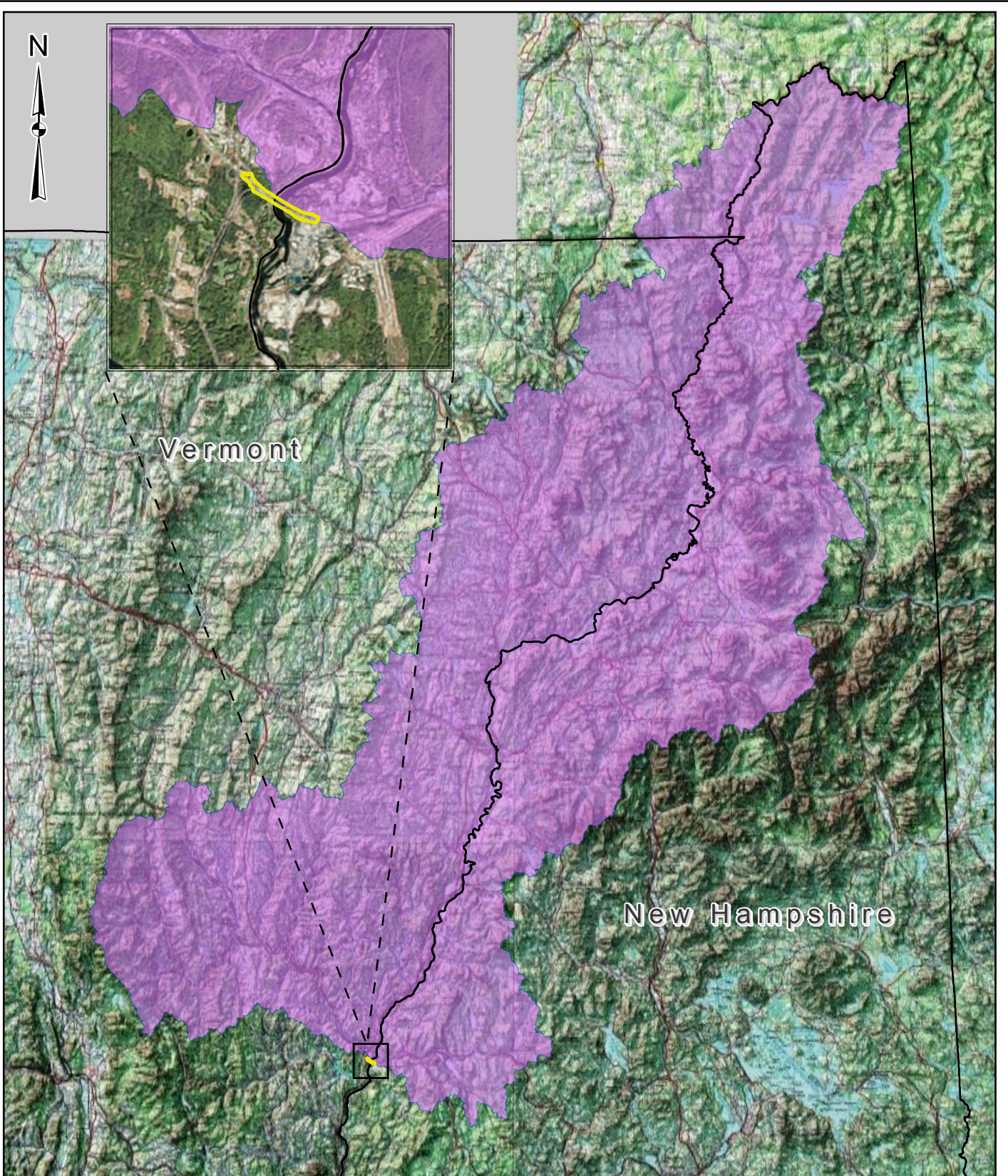
- The Winnepesaukee River is a 5<sup>th</sup> order Tier 3 Stream that drains all of the lakes region – the drainage area = 467 square miles. Silver Lake lies directly upstream which is not controlled by damming.
- The NHB check for the project indicated that there were Bald Eagles and Narrow-leaved Arrowhead at the site. NHFG has confirmed that they have no concerns with bald eagles. A survey was undertaken for narrow-leaved arrowhead and the plant was not found.
- The river is impaired by non-native aquatic species (milfoil).
- Northern Long-Eared Bat coordination will take place under the agreement between USFW and FHWA.
- An Essential Fish Habitat assessment was undertaken by Normandeau because of the potential for Atlantic Salmon in the river. It was determined that there would be no effect to salmon habitat and NHFS has concurred.
- Coordination for floodplain and floodways is ongoing. There will be fill within the mapped floodway, and NEPA requires that the project must demonstrate that there will be no impact to the base flood elevation.
- The Winnepesaukee River Trail parallels the river and will be used for construction. DOT will be coordinating with the town to acquire clearance under Section 4(f).
- The project will require a major impact wetland permit.

Dave McNamara described the deck rehabilitation. The decks are in poor condition and other elements are deteriorating, necessitating a full deck replacement. Alternatives were studied for traffic control, and the preferred alternative uses full crossovers with traffic moving to each bridge as the other bridge is rehabilitated, with one lane of traffic being maintained on the bridge being rehabbed. There is a median wetland that will be temporarily impacted by the crossovers, which will be restored to its existing condition.

Bill Ashford introduced the scour mitigation project. The purpose of the project is to protect the center and southern piers which are scour critical. Permanent impacts will involve adding riprap to the existing riprap around the southern piers and installing precast concrete “A-Jacks” around the center piers. For the center piers existing material will be excavated, bedding material installed, A-Jacks installed, and re-use of the existing stream bed to be material placed over the A-Jacks (no net

## Figure 2 - Connecticut River Watershed Map

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Vermont

New Hampshire




Approximate Project Area



Connecticut River Watershed



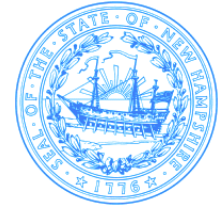
<b>NHDOT</b> LEBANON, NH - HARTFORD, VT 16148		
<b>Connecticut River Watershed</b>		
SCALE: 1 in = 16 miles	DATE: JANUARY 2017	FIGURE: 3
 <b>McFarland Johnson</b>		

## NHDES DataCheck Results Letter

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The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



**Robert R. Scott, Commissioner**

To: Claire Hilsinger  
125 Nagog Park  
Acton, MA 01720  
chilsinger@mjinc.com

From: Ecological Review Section  
New Hampshire Department of Environmental Services

cc: NHFG Review

Date: 12/31/2025 (valid until 12/31/2026)

Re: DataCheck Review by NHDES Ecological Review Section and NH Fish & Game

Permits: NHDES - Alteration of Terrain Permit, NHDES - Shoreland Standard Permit, NHDES - Wetlands Standard Dredge & Fill, USACE - General Permit, USCEQ - Federal: NEPA Review, USEPA - Stormwater Pollution Prevention

**DCT ID: DCT25-3456**

Town: Lebanon

Location: I-89 Bridge over CT River

**Project Description:** The purpose of this request is to update NHB18-2339. This is for the remaining work on the rehabilitation of the I-89 bridges (Bridge No. 044/104 (N.B.) and Bridge No. 044/103 (S.B.)) over the Connecticut River between Lebanon, NH and Hartford, VT. The remaining work entails the construction of stone pad and swale outlet as well as the removal of work trestle and temporary bulkheads on the NH bank.

### **Next Steps for Applicants:**

The New Hampshire Department of Environmental Services (NHDES) Ecological Review Section has reviewed the provided mapped project area against available records of protected species, Exemplary Natural Communities (ENCs), and critical habitat. Based on the project mapping and submitted information it was determined that there are potential impacts. Please carefully read the comments below and consultation instructions on the following pages.

#### **Plant and Exemplary Natural**

**Community Comments:** Please send proposed plans and representative photos during the growing season of the riverbanks and any sand bars within or adjacent to the proposed impact areas (or at the very least take photos without snow cover).

#### **Wildlife and Critical Habitat**

**Comments:** An ecological review is needed to further assess potential impacts to protected wildlife and critical habitat. Please refer to the Wildlife Ecological Review Instructions below for guidance on how to submit an ecological review request and information about when an ecological review is required vs recommended.

[www.des.nh.gov](http://www.des.nh.gov)

29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095  
(603) 271-3503 • Fax: (603) 271-2867 • TDD Access: Relay NH 1-800-735-2964

## Plant and Exemplary Natural Community Ecological Review Instructions

Unless otherwise noted, an ecological review is required if plant and/or ENC records are included on this letter and:

- a. The project is funded or carried out by a state agency; or
- b. Such a review is required pursuant to the administrative rules of a state agency

If a project is not legally required to obtain an ecological review but this letter contains plant and/or ENC records, it is recommended to voluntarily proceed with an ecological review in order to ensure that project impacts do not result in a violation of RSA 217-A.

To request an ecological review for plants and/or ENCs:

1. Email (preferred), mail, or hand-deliver any materials requested in the “Plant and Exemplary Natural Community Comments” section above to:

Department of Environmental Services  
Ecological Review Section  
P.O. Box 95  
29 Hazen Drive  
Concord, New Hampshire 03302-0095  
[ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov)

2. Reference the DataCheck Tool identification number (DCT ID) included on the first page of this letter and include “Ecological Review Request” in the subject line of the request.

*For help with the plant/ENC ecological review process call 603-271-6261.*

## Wildlife and Critical Habitat Ecological Review Instructions

### *Requesting an Ecological Review by NHDES*

An ecological review for wildlife will be completed by the NHDES Ecological Review Section if a NHDES permit, authorization, or approval is needed. *If you do not need any NHDES permits, authorizations, or approvals then please see the section regarding NHFG reviews conducted by the NH Fish and Game Department (NHFG) below.*

Unless otherwise noted, an ecological review by NHDES is required if wildlife/critical habitat records are included on this letter and:

- a. The project is funded or carried out by a state agency; or
- b. Such a review is required pursuant to the administrative rules regarding the permit, approval, or written authorization pursuant to RSA 482-A, RSA 485-A, and RSA 236.

If a project requiring a NHDES permit, authorization, or approval is not legally required to obtain an ecological review, but this letter contains wildlife or critical habitat records, it is recommended to voluntarily proceed with an ecological review in order to ensure that project impacts do not result in a violation of RSA 212-A.

To request an ecological review for wildlife with DES:

1. Email (preferred), mail, or hand-deliver project information following the guidance of [Fis1004.03\(c\)](#) to:

Department of Environmental Services  
Ecological Review Section  
P.O. Box 95  
29 Hazen Drive  
Concord, New Hampshire 03302-0095  
[ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov)

2. Reference the DataCheck Tool identification number (DCT ID) included on the first page of this letter and include "Ecological Review Request" in the subject line of the request.

*For help with wildlife ecological review process call 603-271-0467 or visit the [wildlife environmental review page](#) for guideline materials including a suggested checklist of materials to provide for ecological review.*

## **Wildlife and Critical Habitat Review Instructions (continued)**

### *Requesting a Wildlife Review by NHFG*

Wildlife reviews to assess potential impacts to protected wildlife and critical habitat for any need outside of NHDES permits, authorizations, and approvals are completed by the New Hampshire Fish and Game Department, Nongame & Endangered Wildlife Program.

To request a wildlife review with NHFG:

1. Email (preferred), mail, or hand-deliver available project information to:  
New Hampshire Fish and Game Department  
Attn. Wildlife Division, Nongame Program  
11 Hazen Drive  
Concord, New Hampshire 03301  
[nhfgreview@wildlife.nh.gov](mailto:nhfgreview@wildlife.nh.gov)
2. Reference the DataCheck Tool identification number (DCT ID) included on the first page of this letter and include “Wildlife Review” in the subject line of the request.

*For help with the NHFG wildlife review process call 603-271-2461.*

## **Federal Compliance**

This letter does not constitute compliance with the federal Endangered Species Act (ESA). There may be occurrences of federally listed species in New Hampshire that are not included in this letter. For ESA compliance, please visit the US Fish and Wildlife Service’s (USFWS) [Information for Planning and Consultation \(iPaC\) website](#) for an official list of federally listed species that may be present in your project area. If a federal agency is involved in your project through funding, permit or other authorization, coordinate your iPaC results with your point of contact at the agency for further ESA review. If there is no federal agency nexus to your project, and you determine through iPaC, habitat evaluations etc. that a project may cause take of a federally listed species, we recommend coordinating with the USFWS’ New England Field Office ([newengland@fws.gov](mailto:newengland@fws.gov) or [603-223-2541](tel:603-223-2541)).

**Ecological Review Database records:**

The following record(s) may be impacted by the proposed project. Please refer to this list when coordinating.

<b>Plant species</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
incurved umbrella sedge ( <i>Cyperus squarrosus</i> )	T	--	Changes to local hydrology, or recreational activities along the shoreline, could threaten this species, which occurs on river or streambanks..
<b>Vertebrate species</b>	<b>State<sup>1</sup></b>	<b>Federal</b>	<b>Notes</b>
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	SC	--	Contact the NH Fish & Game Dept (see above).
Eastern Meadowlark ( <i>Sturnella magna</i> )	T	--	Contact the NH Fish & Game Dept (see above).
Peregrine Falcon ( <i>Falco peregrinus anatum</i> )	T	--	Contact the NH Fish & Game Dept (see above).

<sup>1</sup>Codes: "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 25 or more years ago.

**Disclaimer:**

DataCheck Tool screening only includes documented and verified occurrences of protected species and exemplary natural communities. The list of protected species and habitat on this letter does not guarantee these are the only protected species and habitat present at this location, only that their presence has not been documented and verified by state biologists and ecologists. As many areas have never been surveyed, or have only been surveyed for certain species, surveys are the best way to determine what resources are present on site.

DCT25-3456



0 0.03 0.05 0.08 0.1 0.13 Miles

Legend  
City/Town  
Site bounds

[www.des.nh.gov](http://www.des.nh.gov)  
29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095  
(603) 271-3503 • Fax: (603) 271-2867 • TDD Access: Relay NH 1-800-735-2964

## DES Plant Correspondence

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## Christine J. Perron

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**From:** DES: Ecological Reviews <EcologicalReviews@des.nh.gov>  
**Sent:** Tuesday, January 27, 2026 12:52 PM  
**To:** Claire Hilsinger  
**Cc:** Evans, Jonathan; Christine J. Perron  
**Subject:** RE: DCT25-3456 Plant Conservation Measures

Hello Claire,

Thank you for confirming the habitat to be impacted by the remaining work. This information confirms my assumption that incurved umbrella sedge (*Cyperus squarrosus*) is unlikely to occur within the proposed project area.

Thank you also for reaching out about Jesup's milk-vetch (*Astragalus robbinsii* var. *jesupii*) appearing on the USFWS report. I double checked with NHB and they feel confident the likelihood of this species being present within the proposed project area is extremely low.

Because of this I have no further concerns regarding impacts to protected plants under DCT25-3456.

Best,

Madeline (Maddie) Severance (*she/her/hers*)  
Environmental Reviewer  
Ecological Review Section  
Land Resources Management Program  
Water Division, NH Department of Environmental Services  
P.O. Box 95  
Concord, NH 03302-0095  
(603)-271-6261 (**note the new number**)  
[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)  
[DataCheck Tool](#)

NHDES would greatly appreciate your feedback and wants to hear from you. Please take a moment to fill out our short (5-question) [NHDES Customer Service Satisfaction Survey](#).

**Please note as of December 1, 2025**, all ecological reviews for wildlife will be completed by the NHDES Ecological Review Section if a NHDES permit, authorization, or approval is needed. All project information that used to be sent to NHFG should now be sent to [ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov). For projects not involving NHDES, a wildlife review may be requested from [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov).

---

**From:** Claire Hilsinger <CHilsinger@mjinc.com>  
**Sent:** Thursday, January 22, 2026 1:22 PM  
**To:** DES: Ecological Reviews <EcologicalReviews@des.nh.gov>  
**Cc:** Evans, Jonathan <Jonathan.A.Evans@dot.nh.gov>; Perron, Christine <CPerron@mjinc.com>  
**Subject:** RE: DCT25-3456 Plant Conservation Measures

**EXTERNAL EMAIL WARNING!** This email originated outside of the New Hampshire Executive Branch network. Do not open attachments or click on links unless you recognize the sender and are expecting the email. Do not enter your username and password on sites that you have reached through an email link. Forward suspicious and unexpected messages by clicking the Phish Alert button in your Outlook and if you did click or enter credentials by mistake, report it immediately to [helpdesk@doit.nh.gov](mailto:helpdesk@doit.nh.gov)!

Hi Maddie.

Thank you for your input. I am including photos below, indicating the impact areas in question.

The habitat at the drainage pipe location (**Impact Area F**) may not be suitable for *Cyperus squarrosus*, see photos below.

**Impact Area F** shown at the left of the photo, with the drainage pipe location shown at the red arrow:



**Impact Area F** (located below the steps seen in the above photo), showing the drainage pipe outlet/riprap location at or below OHW:



Grading for the vegetated swale will not extend below OHW (**Impact Area A**) so the flat shore area below the knotweed will only be temporarily disturbed, see photo below.

**Impact Area A** shown at the red line, where the vegetated swale outlet location will be. **Impact Areas B** and **C** are shown to the center and left, where the bulkhead and work trestle are currently located:



Regarding your request to avoid **Impact Areas D and E**, the activity at this location will be bulkhead removal and bank restoration, and disturbance will take place above the stone slope you pointed out in the pic.

Finally, the USFWS reports that Jesup's milk-vetch, *Astragalus robbinsii* var. *jesupii* could occur in this region. Do you think there is potential for that species to occur in the areas we've been discussing?

Thank you!

Claire



**CLAIRE HILSINGER**  
ENVIRONMENTAL ANALYST

978-692-0522

CHILSINGER@MJINC.COM

WWW.MJINC.COM



**IT'S OFFICIAL!**

IT'S OUR PEOPLE WHO MAKE MJ GREAT!

**From:** DES: Ecological Reviews <[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)>  
**Sent:** Wednesday, January 21, 2026 10:58 AM  
**To:** Claire Hilsinger <[CHilsinger@mjinc.com](mailto:CHilsinger@mjinc.com)>  
**Cc:** Evans, Jonathan <[Jonathan.A.Evans@dot.nh.gov](mailto:Jonathan.A.Evans@dot.nh.gov)>  
**Subject:** DCT25-3456 Plant Conservation Measures

Hello Claire,

Thank you for clearly indicating what work has been completed and what work is still proposed. Usually we would not flag a project in progress for a species not previously identified on the DataCheck Letter, however this occurrence was newly documented adjacent to the proposed work area in 2022 warranting further review.

Incurved umbrella sedge (*Cyperus squarrosus*) occurs in the sand of river shores. Based on the provided information, the impact area F appears to be heavily vegetated with no open exposed sandy areas that would support this species. The impacts areas A, B, and C also appear to be heavily vegetated but because of the distance of the photo I cannot confirm there are no exposed sandy areas proposed to be impacted. **Could you please confirm if this impact area has any exposed sandy areas proposed to be impacted?**

Impact areas D and E appear to be rocky/gravelly with no obvious exposed sand. Although unlikely, this species could still occur in this area along the river where the rock is smaller and there may be more opportunity for plant growth in small sandy spaces (see attached markup photo). Based on the provided plans, work in this area is temporary and appears to be focused on already disturbed areas or areas where I would not expect this plant to be. **In order to avoid and minimize impacts if incurved umbrella sedge is present along the river in impact areas D, and E, I recommend avoiding the use of machinery or any other impacts in the area outlined in the attached photo to the greatest extent feasible.**

If it is confirmed that none of the proposed impact areas contain exposed sandy soil, then I have no further concerns regarding impacts to protected plants under DCT25-3456.

Best,

Madeline (Maddie) Severance (*she/her/hers*)  
Environmental Reviewer  
Ecological Review Section  
Land Resources Management Program  
Water Division, NH Department of Environmental Services  
P.O. Box 95  
Concord, NH 03302-0095  
(603)-271-6261 (**note the new number**)  
[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)

NHDES would greatly appreciate your feedback and wants to hear from you. Please take a moment to fill out our short (5-question) [NHDES Customer Service Satisfaction Survey](#).

**Please note as of December 1, 2025**, all ecological reviews for wildlife will be completed by the NHDES Ecological Review Section if a NHDES permit, authorization, or approval is needed. All project information that used to be sent to NHFG should now be sent to [ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov). For projects not involving NHDES, a wildlife review may be requested from [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov).

---

**From:** Claire Hilsinger <[CHilsinger@mjinc.com](mailto:CHilsinger@mjinc.com)>  
**Sent:** Friday, January 16, 2026 11:08 AM  
**To:** DES: Ecological Reviews <[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)>  
**Cc:** Evans, Jonathan <[Jonathan.A.Evans@dot.nh.gov](mailto:Jonathan.A.Evans@dot.nh.gov)>  
**Subject:** RE: NHDES PLANT Ecological Review: DCT25-3456

**EXTERNAL EMAIL WARNING!** This email originated outside of the New Hampshire Executive Branch network. Do not open attachments or click on links unless you recognize the sender and are expecting the email. Do not enter your username and password on sites that you have reached through an email link. Forward suspicious and unexpected messages by clicking the Phish Alert button in your Outlook and if you did click or enter credentials by mistake, report it immediately to [helpdesk@doit.nh.gov](mailto:helpdesk@doit.nh.gov)!

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Hello.

The DCT25-3456 Ecological Review determined that incurved umbrella sedge (*Cyperus squarrosus*) may be impacted by this project. Attached are the materials for the Plant Ecological Review.

Please note that construction has been ongoing since September 2020, and the only remaining impacts are in or adjacent to already disturbed areas.

Thank you and let me know if you have any questions,  
Claire



**CLAIRE HILSINGER**  
ENVIRONMENTAL ANALYST

978-692-0522  
[CHILSINGER@MJINC.COM](mailto:CHILSINGER@MJINC.COM)  
[WWW.MJINC.COM](http://WWW.MJINC.COM)



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**From:** DES: Ecological Reviews <[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)>  
**Sent:** Wednesday, December 31, 2025 5:06 PM  
**To:** Claire Hilsinger <[CHilsinger@mjinc.com](mailto:CHilsinger@mjinc.com)>  
**Cc:** Evans, Jonathan <[Jonathan.A.Evans@dot.nh.gov](mailto:Jonathan.A.Evans@dot.nh.gov)>  
**Subject:** NHDES Ecological Review: DCT25-3456

You don't often get email from [ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov). [Learn why this is important](#)

Attached, please find the NHDES Ecological Review Section's report on whether the proposed project could impact protected species, exemplary natural communities, and critical habitat.

To request an ecological review for plants, wildlife, or protected habitat, please reply to this email with any information requested in the comments of the DataCheck Tool results letter.

You may refer to the following [checklist](#) as a guideline for information that should be provided when requesting an ecological review for wildlife.

**Please note that as of December 1, 2025**, all ecological reviews for wildlife will be completed by the NHDES Ecological Review Section if a NHDES permit, authorization, or approval is needed. All project information that used to be sent to NHFG should now be sent to this email. For projects not involving NHDES, a wildlife review may be requested from [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov).

For questions about requesting an ecological review, please contact me by replying to this email or calling: (603) 271-7972.

Best,  
Ryan

Ryan Esch (he/him)  
Ecological Information Specialist  
Ecological Review Section  
Land Resources Management Program  
Water Division, NH Department of Environmental Services  
P.O. Box 95  
Concord, NH 03302-0095  
603-271-7972

## DES Wildlife Correspondence

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## Christine J. Perron

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**From:** DES: Ecological Reviews <EcologicalReviews@des.nh.gov>  
**Sent:** Tuesday, February 10, 2026 5:02 PM  
**To:** Christine J. Perron  
**Cc:** Evans, Jonathan; Martin, Rebecca; Claire Hilsinger  
**Subject:** RE: DCT25-3456 Amended Wildlife Conservation Measures

Hi Christine,

Thank you for these edits, Rebecca looped me in about some of the specifics of NHDOT reviews that are different than standard reviews, apologies that I was not aware.

**Please see below the amended conservation measures.**

1. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided with NHFG approved flyers that help to identify these species, along with NHFG biologist contact information. Approved Protected Species Flyers are provided on the [NHFG website](#).
  - a. Peregrine falcon occur within the vicinity of the project area. All operations and personnel working on or entering the site will be made aware of the potential presence of this species and flyers will be available to help identify this species, along with NHFG contact information. Additionally, peregrine falcon information shall be communicated if/when weekly project progress meetings are held on site.
  - b. If a nest is observed on the bridge, project activities shall cease until further instruction by NHFG is provided. See Species Flyers for NHFG biologist contact information.
2. Any remaining work to the bridge structure (if proposed) should occur between July 16<sup>th</sup> and March 14<sup>th</sup> to avoid the breeding season for Peregrine falcon. If work on the bridge must occur during the breeding season, contractors shall be made aware of the potential presence of this species and visually check for nests and nesting materials, particularly on ledges underneath the bridge.
3. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov), with the email subject line containing the DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible.
4. In the event a protected species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with and implementation of corrective actions recommended by NHFG.
5. The NHDES Ecological Review Section, including its employees and authorized agents, shall have access to the project site during the term of the permit. The NHDOT Contract Administrator or Environmental Coordinator for the project shall be contacted in advance to coordinate safe access to the site. In case of the need for emergency site access, NHFG may contact Kevin Nyhan at 603-271-3226.

**Additional recommendations not required to be added to the permit.**

1. These Conservation Measures do not constitute compliance with the federal Endangered Species Act (ESA). There may be occurrences of federally listed species in New Hampshire that are not included on the DataCheck Letter. Please visit the US Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website (IPaC; <https://ipac.ecosphere.fws.gov/>) for an official list of federally listed species that may be present in your project area. If a federal agency is involved in your project through funding, permit, or other authorization, coordinate your IPaC results with your point of contact at the agency for further ESA review. If there is no federal agency nexus to your project, and you determine through IPaC, habitat evaluations, etc. that a project may cause take of a federally listed species, we recommend coordinating with the USFWS' New England Field Office ([newengland@fws.gov](mailto:newengland@fws.gov); 603-223-2541).
2. Condition 2 above is also recommended for any future maintenance on the bridge to avoid impacts to any current or future Peregrine falcon nests. Any maintenance on occupied structures should be closely coordinated with NHFG and NH Audubon.

The Ecological Review Section has completed our review of materials submitted for Ecological Review of protected wildlife. No further coordination with the Ecological Review Section regarding protected wildlife is requested at this time. Please note that additional or a new consultation may be required if there are changes in project design that is referenced above which might result in potential impacts to threatened and endangered species, whether suggested to avoid harm to the species, or which could serve to increase the potential of adverse impacts to species. These recommendations have been transmitted to the applicable permitting agency.

Respectfully,

Madeline (Maddie) Severance (*she/her/hers*)  
Environmental Reviewer  
Ecological Review Section  
Land Resources Management Program  
Water Division, NH Department of Environmental Services  
P.O. Box 95  
Concord, NH 03302-0095  
(603)-271-6261 (**note the new number**)  
[EcologicalReviews@des.nh.gov](mailto:EcologicalReviews@des.nh.gov)  
[DataCheck Tool](#)

*NHDES would greatly appreciate your feedback and wants to hear from you. Please take a moment to fill out our short (5-question) [NHDES Customer Service Satisfaction Survey](#).*

**Please note as of December 1, 2025**, all ecological reviews for wildlife will be completed by the NHDES Ecological Review Section if a NHDES permit, authorization, or approval is needed. All project information that used to be sent to NHFG should now be sent to [ecologicalreviews@des.nh.gov](mailto:ecologicalreviews@des.nh.gov). For projects not involving NHDES, a wildlife review may be requested from [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov).

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**From:** Christine J. Perron <CPerron@mjinc.com>  
**Sent:** Monday, February 9, 2026 4:07 PM  
**To:** DES: Ecological Reviews <EcologicalReviews@des.nh.gov>  
**Cc:** Evans, Jonathan <Jonathan.A.Evans@dot.nh.gov>; Martin, Rebecca <rebecca.a.martin@dot.nh.gov>; Claire Hilsinger

## USFWS Official Species List

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# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 3301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:

12/29/2025 20:17:00 UTC

Project Code: 2022-0023097

Project Name: Lebanon, NH - Hartford, VT 16148

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](mailto: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 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](mailto: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 3301-5094  
(603) 223-2541

## PROJECT SUMMARY

Project Code: 2022-0023097  
Project Name: Lebanon, NH - Hartford, VT 16148  
Project Type: Road/Hwy - Maintenance/Modification  
Project Description: Overall project consisted of rehabilitation and widening of the two bridges that carry Interstate 89 over the Connecticut River between Lebanon, NH and Hartford, VT. The majority of the work has been completed. The remaining work consists of stone pad and swale outlet construction and removal of work trestle and temporary bulkhead.

### Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.63456862960728,-72.32948012413948,14z>



Counties: New Hampshire and Vermont

## 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 Fisheries<sup>1</sup>, 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: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

**INSECTS**

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	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: <a href="https://ecos.fws.gov/ecp/species/388">https://ecos.fws.gov/ecp/species/388</a>	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: McFarland-Johnson, Inc.

Name: Claire Hilsinger

Address: 125 Nagog Park

City: Acton

State: MA

Zip: 01720

Email: chilsinger@mjinc.com

Phone: 9787950018

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Highway Administration

## USFWS Jesup's Milk-vetch Informal Consultation Letter



**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



**William Cass, P.E.**  
**Commissioner**

**David Rodrigue, P.E.**  
**Assistant Commissioner**

**Michelle L. Winters**  
**Deputy Commissioner**

Dr. Audrey Mayer  
Field Office Supervisor  
U.S. Fish and Wildlife Service New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301

January 28, 2026

Re: Request for Informal Consultation, Federal Highway Administration and New Hampshire Department of Transportation  
Project: Lebanon-Hartford 16148, Jesup's milk-vetch, Project Code: 2022-0023097

Dear Dr. Mayer,

The New Hampshire Department of Transportation (NHDOT) is submitting the following request to initiate informal consultation for Jesup's milk-vetch (*Astragalus robbinsii* var. *jesupii*) for the Lebanon-Hartford 16148 Bridge Rehabilitation project. The Federal Highway Administration (FHWA) is the lead federal agency. NHDOT is a designated non-federal representative of the FHWA for informal consultation. This is a request for review pursuant to Section 7 of the Endangered Species Act for the NHDOT's and FHWA's 16148 project to rehabilitate the I-89 bridge over the Connecticut River.

The Information for Planning and Consultation (IPaC) tool was utilized to generate an Official Species List for the 16148 project area. The Official Species list includes Jesup's milk-vetch. There is no suitable habitat for Jesup's milk-vetch within areas that will be directly impacted by the project. The previous USFWS IPaC Official Species List did not include Jesup's milk-vetch, so informal consultation for this species was not completed during the project's initial environmental review. The project needed a new wetland permit due to the length of time of construction surpassing the term of the original NH Department of Environmental Services Wetland Permit. Therefore, a review of the resources in the project area, including updating the IPaC Official Species list has been completed. Jesup's milk-vetch is on the project's current IPaC Official Species List.

We request informal consultation for the 16148 project. The USFWS Project Code is 2022-0023097. The purpose of the NHDOT 16148 bridge rehabilitation project is to improve safety by addressing geometric deficiencies and to preserve the structural integrity of the existing I-89 northbound and southbound bridges while maintaining this vital, high-volume transportation link between New Hampshire and Vermont. This request is for the work that remains of the bridge rehabilitation project that is actively under construction. Active construction has been ongoing since September 2020. Bridge rehabilitation work that has already been completed includes the following: Bridge in-fill between the two existing bridges, new piers constructed between

the existing piers, new superstructure construction, and scour protection measures. A temporary bulkhead was erected on each bank and a temporary work trestle across the Connecticut River was constructed on the downstream side of the bridge.

Work that remains to be completed consists of the following:

- Construction of the stone apron at the drainage pipe outlet on the upstream side of the bridge (permanent impact area F on the enclosed Wetland Impact Plans);
- Construction of the outlet for the vegetated swale on the downstream side of the bridge (permanent impact area A);
- Removal of the temporary work trestle (temporary impact area G);
- Removal of the bulkheads (temporary impact areas B, C, D and E); and
- Restoration of the bank impacted by the trestle and bulkheads (temporary impact areas B and D).

*Astragalus robbinsii* var. *jesupii* is reported only to grow on rocky shores of the Connecticut River composed of phyllite or chlorite schist. Like other members of the *Astragalus robbinsii* complex, this variety is associated with rock that is rich in calcium and magnesium (U.S. Fish and Wildlife Service 1989, NatureServe 2001). The plants occur on moderately steep bedrock slopes that face east or southwest, in crevices and shelves where some litter and sediment has been deposited. The river shores where this plant can be found are periodically scoured by ice breaking up and floating down the Connecticut River in spring; thus, plants are sparse and few species that cannot tolerate such disturbance are present.

Wetland boundaries and ordinary high water/top-of-bank of water courses located within the project area were delineated in September 2014 and confirmed in 2025. The 16148 project area occurs within the channel and bank of the Connecticut River. The only proposed impacts are in or adjacent to already disturbed areas, none of which include exposed or scoured bedrock. Banks are heavily vegetated with sandy/gravelly/rocky soils. The project has an approved mixing zone that extends 1,300 feet downstream. This is the extent of the action area for turbidity in the Connecticut River. There is a large rock outcrop in the river about 500 feet downstream and no project impacts will take place in the area of this outcrop. Bedrock geology maps do not show any chlorite or phyllite schist in this area and the indirect impacts associated with turbidity would be limited to the water and would not impact crevices in the rock above the flow of water. Since there is no suitable habitat in the area where direct impacts are proposed and the increased turbidity would only impact the river downstream of the project area and not the adjacent banks, NHDOT has determined that the project is not likely to adversely affect the Jesup's milk vetch.

Conservation measures to reduce impacts have been included in the project design including:

- a Stormwater Pollution Prevention Plan to minimize erosion and sedimentation in the project area, and
- reducing impacts to the Connecticut River and its banks to only those necessary to complete project activities.

The USFWS 2021 5-Year Review identifies three extant populations of Jesup's milk-vetch in Sumner Falls (NH), Hartland Ledges (VT), and Jarvis Hill (NH), locations that range from approximately 5 miles to 15 miles south of the project. There are 22 observations of this species listed in iNaturalist. None of the observations appear to be located along the Connecticut River. The updated NHDES DataCheck Review did not include records of Jesup's milk-vetch. The NH Natural Heritage Bureau was contacted through the NHDES Ecological Review Section for input on the potential for this species to occur in the project area and they confirmed that the likelihood of this species being present within the proposed project area is extremely low.

We respectfully request your concurrence with a may affect, not likely to adversely affect determination for Jesup's milk-vetch for the 16148 project.

The species list for the project also includes the northern long-eared bat (endangered), the tricolored bat (proposed endangered) and the monarch butterfly (proposed threatened). The project has been reviewed using the USFWS Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key in IPaC and has been determined to be NLAA the northern long-eared bat and the tricolored bat. The project would not jeopardize the continued existence of the monarch butterfly, therefore, conferencing for the monarch is not required and is not being requested at this time.

For additional information, please contact Rebecca Martin at (603) 271-6781 or [Rebecca.a.martin@dot.nh.gov](mailto:Rebecca.a.martin@dot.nh.gov).

Sincerely,

Rebecca Martin  
NHDOT BOE Plant and Wildlife Program Manager

Encl.:

Photo Log

Project Plans

NHDES DataCheck Review

Correspondence- NHDES Ecological Review Section

IPaC Species List

IPaC NLAA Concurrence Verification for NLEB and TCB

## USFWS Northern Long-Eared Bat and Tricolored Bat Consistency Letter

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 3301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:  
Project code: 2022-0023097  
Project Name: Lebanon, NH - Hartford, VT 16148

01/28/2026 12:56:00 UTC

Federal Nexus: yes  
Federal Action Agency (if applicable): Federal Highway Administration

**Subject:** Federal agency coordination under the Endangered Species Act, Section 7 for  
'Lebanon, NH - Hartford, VT 16148'

Dear Rebecca Martin:

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 28, 2026, for 'Lebanon, NH - Hartford, VT 16148' (here forward, Project). This project has been assigned Project Code 2022-0023097 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:

<b>Species</b>	<b>Listing Status</b>	<b>Determination</b>
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	Endangered	NLAA
Tricolored Bat ( <i>Perimyotis subflavus</i> )	Proposed Endangered	NLAA

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 2022-0023097 associated with this Project.

## Action Description

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

### 1. Name

Lebanon, NH - Hartford, VT 16148

### 2. Description

The following description was provided for the project 'Lebanon, NH - Hartford, VT 16148':

Overall project consisted of rehabilitation and widening of the two bridges that carry Interstate 89 over the Connecticut River between Lebanon, NH and Hartford, VT. The majority of the work has been completed. The remaining work consists of stone pad and swale outlet construction and removal of work trestle and temporary bulkhead.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.63411835482251,-72.32841894447564,14z>



## 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.

*No*

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

**Note for projects in Pennsylvania:** Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

*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. 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*

8. 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*

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

*No*

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? 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*

11. 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*

12. 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*

13. Will the action cause effects to a covered bridge?

*No*

14. 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*

15. Does the action include the intentional exclusion of bats from a building or building-like 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*

16. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

*No*

17. 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*

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time 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*

19. 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*

20. 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*

21. 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*

22. Will the action include drilling or blasting?

*Yes*

23. 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 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>

*Yes*

24. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

*No*

25. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

*No*

26. 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*

27. 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>.

*Yes*

28. Will the action cause an increase in the extent of suitable forested habitat exposed to artificial lighting?

*No*

29. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

*No*

30. Will the proposed action result in the use of prescribed fire?

**Note:** If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

*No*

31. Does the action area intersect the northern long-eared bat species list area?

**Automatically answered**

*Yes*

32. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known NLEB hibernacula or winter roost? **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*

33. [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*

34. [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. Have you contacted the appropriate agency to determine if your action is within 150 feet of any documented northern long-eared bat roosts?

Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat roosts is available here. Location information for northern long-eared bat roosts is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

**Automatically answered**

No

35. 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>.

Yes

36. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's [Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

37. Will drilling or blasting occur during the **Summer Occupancy** season for northern long-eared bats in the action area?

**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.

No

38. Does the action area intersect the tricolored bat species list area?

**Automatically answered**

Yes

39. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

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. [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

41. 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?

No

42. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?  
(If unsure, answer ""Yes."" )

**Note:** If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

Yes

43. Will drilling or blasting occur during the **Pup season** for tricolored bats in the action area?  
**Note:** Bat activity periods for your state can be found in Appendix 2 of the Service's [Northern Long-eared Bat and Tricolored Bat Voluntary Environmental Review Process for Development Projects](#).

No

44. Do you have any documents that you want to include with this submission?

No

# PROJECT QUESTIONNAIRE

## **IPAC USER CONTACT INFORMATION**

Agency: New Hampshire Department of Transportation

Name: Rebecca Martin

Address: 7 Hazen Drive

City: Concord

State: NH

Zip: 03302

Email: rebecca.a.martin@dot.nh.gov

Phone: 6032716781

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Highway Administration

## Section 106 Effect Memo

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Victoria F. Sheehan  
Commissioner

THE STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION



William Cass, P.E.  
Assistant Commissioner

Lebanon, NH – Hartford, VT  
A001(154)  
16148  
RPR 4493

**No Historic Properties Affected Memo**

Pursuant to the Request for Project Review signed by the NH Division of Historical Resources (NHDHR) on January 24, 2013, and for the purpose of compliance with regulations of the National Historic Preservation Act and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the NH Division of the Federal Highway Administration (FHWA), the NH Department of Transportation (NH DOT), the Vermont Agency of Transportation (VAOT), and the NHDHR have coordinated the identification and evaluation of historical and archaeological resources with plans to rehabilitate and widen the north and south bound bridges that carry I-89 over the Connecticut River between Lebanon, New Hampshire and Hartford, Vermont. The Vermont Agency of Transportation (VTTrans) has reviewed this project according to the standards and procedures detailed in the 2000 Programmatic Agreement (PA) regarding Implementation of the Federal Highway Administration's (FHWA) Federal-Aid Highway Program in Vermont and the corresponding Manual of Standards and Guidelines (Manual).

Project Description

The project consists of the rehabilitation of the Interstate 89 bridges that span the Connecticut River and New England Central Railroad between Lebanon, NH and Hartford, VT (Bridges 044/103 and 044/104). The existing superstructure steel will be replaced with new steel and an in-fill will be constructed in the gap between the bridges to provide a single 110' +/- wide bridge deck. The in-fill will require new footings between each of the five pairs of existing piers. The resulting bridge will provide two through lanes in each direction and auxiliary lanes between Exit 20 and the I-91 ramps in both directions, and will require realignment of I-89 on both approaches. The project will also include the installation of scour protection around three of the five piers and construction of stormwater treatment areas on both sides of the river. The Area of Potential Effect (APE) includes the existing right-of-way in New Hampshire and Vermont, as well as an area along the railroad adjacent to the bridges to accommodate construction access.

Analysis

Based on a review pursuant to 36 CFR 800.4 of the architectural and/or archaeological significance of resources in the APE, we agree that there are no above ground or below ground resources within the APE. The bridges carrying the interstate are exempt from Section 106 Review by Agreement with the Advisory Council on Historic Preservation and the FHWA, under the 2005 Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System. Further, a 1994 Phase IA Archaeological Assessment was completed for the NH quadrants and determined that there was no sensitivity within this projects APE. A Phase IB Archaeological Reconnaissance Survey was completed on the northeast quadrant in VT in 2016. The VAOT Archaeology Officer reviewed the report and determined that no additional subsurface testing was necessary.

Public Consultation

A Public Informational Meeting was held on July 24, 2014 in West Lebanon, New Hampshire and a Public Officials Meeting was held on July 16, 2014 at the Lebanon City Council Meeting. Outreach letters were sent to local historical societies, the New Hampshire Preservation Alliance, the Connecticut River Joint Commissions, and local conservation commissions. No Consulting Parties were identified.

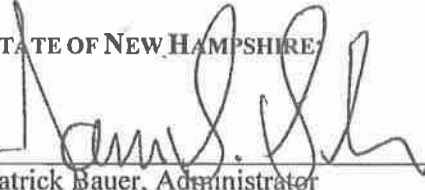
Determination of Effect

Based on a review pursuant to 36 CFR 800.4, we agree that no historic or archaeological resources are affected in the project area and that no further survey work is needed.


Section 4(f) (to be completed by FHWA)	There Will Be:	<input checked="" type="checkbox"/> No 4(f);	<input type="checkbox"/> Programmatic 4(f);	<input type="checkbox"/> Full 4 (f); or
	<input type="checkbox"/> <b>A finding of <i>de minimis</i> 4(f) impact as stated:</b> In addition, with NHDHR concurrence of no adverse effect for the above undertaking, and in accordance with 23 CFR 774.3, FHWA intends to, and by signature below, does make a finding of <i>de minimis</i> impact. NHDHR's signature represents concurrence with both the no adverse effect determination and the <i>de minimis</i> findings. Parties to the Section 106 process have been consulted and their concerns have been taken into account. Therefore, the requirements of Section 4(f) have been satisfied.			

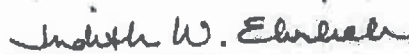
In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

STATE OF NEW HAMPSHIRE

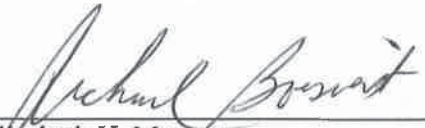
*for*  1/19/17  
 Patrick Bauer, Administrator  
 Federal Highway Administration  
 Date

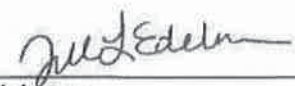
STATE OF VERMONT:

  
 Jeannine Russell-Pinkham  
 Archaeology Officer  
 VT Agency of Transportation  
 Date

 1/19/2017  
 Judith Ehrlich  
 Historic Preservation Officer  
 VT Agency of Transportation  
 Date

Concurred with by:

*for*  1-23-17  
 Elizabeth H. Muzzey  
 State Historic Preservation Officer  
 NH Division of Historical Resources  
 Date

 1/17/2017  
 Jillian Edelmann  
 Cultural Resources Manager  
 NH Department of Transportation  
 Date

c.c. Chris St. Louis, NHDHR  
Jamie Sikora, FHWA  
Lee Goldstein, VAOT

Christine Perron, McFarland-Johnson  
Marc Laurin, NHDOT

S:\Environment\CULTURAL\MEMOS\CURRENT\NoHistoricPropertiesAffectedFHWA.doc



Figure 1: Illustrating the general project location, project area on the Vermont side (in red) and area tested for archaeology (in blue) From Hartgen report 10-16-16.

## NH GP Appendix B – USACE Section 404 Checklist



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

**Appendix B  
New Hampshire General Permits  
Required Information and USACE Section 404 Checklist**

**USACE Section 404 Checklist**

1. Attach any explanations to this checklist. Lack of information could delay a USACE 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 3 for information on single and complete projects.
4. Contact USACE at (978) 318-8832 with any questions.
5. The information requested below is generally required in the NHDES Wetland Application. See page 61 for NHDES references and Admin Rules as they relate to the information below.

<b>1. Impaired Waters</b>	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See the following to determine if there is an impaired water in the vicinity of your work area. * <a href="https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/">https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/</a> <a href="https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment">https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment</a> <a href="https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx">https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx</a>	X	
<b>2. Wetlands</b>	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 tidal SAS, prime wetlands, or priority resource areas? 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 <a href="https://www4.des.state.nh.us/NHB-DataCheck/">https://www4.des.state.nh.us/NHB-DataCheck/</a> .		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?		
2.7 What is the area of the proposed fill in wetlands?	0 SF	
2.8 What % of the overall project sire will be previously and proposed filled wetlands?		
<b>3. Wildlife</b>	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: <a href="https://www4.des.state.nh.us/NHB-DataCheck/">https://www4.des.state.nh.us/NHB-DataCheck/</a> . USFWS IPAC website: <a href="https://ipac.ecosphere.fws.gov/">https://ipac.ecosphere.fws.gov/</a>	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: <ul style="list-style-type: none"> <li>• PDF: <a href="https://wildlife.state.nh.us/wildlife/wap-high-rank.html">https://wildlife.state.nh.us/wildlife/wap-high-rank.html</a>.</li> <li>• Data Mapper: <a href="http://www.granit.unh.edu">www.granit.unh.edu</a>.</li> <li>• GIS: <a href="http://www.granit.unh.edu/data/downloadfreedata/category/databycategory.html">www.granit.unh.edu/data/downloadfreedata/category/databycategory.html</a>.</li> </ul>			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 31?	N/A		
<b>4. Flooding/Floodplain Values</b>	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?			X
<b>5. Historic/Archaeological Resources</b>			
For a minimum, minor or major impact project - a copy of the RPR Form ( <a href="http://www.nh.gov/nhdhr/review">www.nh.gov/nhdhr/review</a> ) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 37 GC 14(d) of the GP document**	X		
<b>6. Minimal Impact Determination (for projects that exceed 1 acre of permanent impact)</b>	Yes	No	
Projects with greater than 1 acre of permanent impact must include the following: <ul style="list-style-type: none"> <li>• Functional assessment for aquatic resources in the project area.</li> <li>• On and off-site alternative analysis.</li> <li>• Provide additional information and description for how the below criteria are met.</li> </ul>	N/A		
6.1 Will there be complete loss of aquatic resources on site?			
6.2 Have the impacts to the aquatic resources been avoided and minimized to the greatest extent practicable?			
6.3 Will all aquatic resource function be lost?			
6.4 Does the aquatic resource (s) have regional significance (watershed or ecoregion)?			
6.5 Is there an on-site alternative with less impact?			
6.6 Is there an off-site alternative with less impact?			
6.7 Will there be a loss to a resource dependent species?			
6.8 Are indirect impacts greater than 1 acre within and adjacent to the project area?			
6.9 Does the proposed mitigation replace aquatic resource function for direct, indirect, and cumulative impacts?			

\*Although this checklist utilizes state information, its submittal to USACE is a federal requirement.

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

ACOE Appendix B Supplemental Narrative

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**1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water?**

This segment of the river is listed on the NHDES 2024 303(d) List for *E. coli* impairment to primary contact recreation, and mercury impairment to fish consumption. The project will not change the conditions responsible for these impairments.

Stormwater runoff from the pavement created by the bridge rehabilitation is being treated by a permanent treatment swale and infiltration basin installed during the initial portion of this project. All appropriate erosion and sedimentation control measures during the remaining project activities will be utilized to avoid adverse impacts to water quality. For these reasons, the project is not expected to impact overall water quality in the project area.

**2.1 Are there streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?**

The Connecticut River has a width of approximately 550 feet in the project area and is a 7th order river with a watershed that extends north into Canada. Active construction of this bridge rehabilitation project has been ongoing since September 2020. Bridge rehabilitation work that has already been completed includes the following: bridge in-fill between the two existing bridges, new piers constructed between the existing piers, and new superstructure. A temporary bulkhead on each bank and temporary work trestle across the Connecticut River was constructed on the downstream side of the bridge. Temporary impact to channel and bank will result from removal of bulkheads and temporary work trestles and subsequent bank restoration, and permanent impact to bank will result from construction of drainage pipe and vegetated swale outlets.

**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?**

The NH Department of Environmental Services Ecological Review Section has records of the following State listed species in the vicinity of the project:

- Incurved umbrella sedge (*Cyperus squarrosus*) (NH State threatened)
- Bald eagle (*Haliaeetus leucocephalus*) (NH State species of special concern)
- Eastern meadowlark (*Sturnella magna*) (NH State threatened)
- Peregrine falcon (*Falco peregrinus anatum*) (NH State threatened)

Incurved umbrella sedge occurs in the sand of river shores. It was confirmed with the NHDES Ecological Review Section that none of the proposed impact areas contain exposed sandy soil. There are no further concerns regarding impacts to this species. Documentation is included elsewhere in the application package.

Bald eagles require large open bodies of water with nearby large trees for perching and nesting. There are no large trees within the project study area and the remaining work will not require cutting trees.

Eastern meadowlarks require large open grasslands. There is no suitable habitat within the project area.

**NH Department of Transportation  
Lebanon-Hartford, 16148**

**ACOE Appendix B Supplemental Narrative**

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Peregrine falcons require tall cliffs or structures for nesting, often near water. There were no known peregrine falcon nesting sites in the project area prior to the start of construction. Bridge construction activities have been ongoing since 2020 and there have been no reports of falcon activity at the bridges during that time.

A NHDES Wildlife Ecological review was completed on February 10, 2026. The NHDES Ecological Review Section has no further concerns regarding impacts to bald eagles or eastern meadowlark, however, provided the conservation measures listed below for peregrine falcon to be included in contract documents. Documentation is included elsewhere in the application package.

1. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided with NHFG approved flyers that help to identify these species, along with NHFG biologist contact information. Approved Protected Species Flyers are provided on the NHFG website.
  - a. Peregrine falcon occur within the vicinity of the project area. All operations and personnel working on or entering the site will be made aware of the potential presence of this species and flyers will be available to help identify this species, along with NHFG contact information. Additionally, peregrine falcon information shall be communicated if/when weekly project progress meetings are held on site.
  - b. If a nest is observed on the bridge, project activities shall cease until further instruction by NHFG is provided. See Species Flyers for NHFG biologist contact information.
2. Any remaining work to the bridge structure (if proposed) should occur between July 16th and March 14th to avoid the breeding season for Peregrine falcon. If work on the bridge must occur during the breeding season, contractors shall be made aware of the potential presence of this species and visually check for nests and nesting materials, particularly on ledges underneath the bridge.
3. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at [NHFGreview@wildlife.nh.gov](mailto:NHFGreview@wildlife.nh.gov), with the email subject line containing the DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible.
4. In the event a protected species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with and implementation of corrective actions recommended by NHFG.
5. The NHDES Ecological Review Section, including its employees and authorized agents, shall have access to the project site during the term of the permit. The NHDOT Contract Administrator or Environmental Coordinator for the project shall be contacted in advance to coordinate safe access to the site. In case of the need for emergency site access, NHFG may contact Kevin Nyhan at 603-271-3226.

ACOE Appendix B Supplemental Narrative

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The USFWS Information, Planning and Conservation System (IPaC) web tool was utilized to determine if federally listed species have the potential to occur in the project area. According to IPaC, the following species are potential concerns in this region:

- Northern long-eared bat (*Myotis septentrionalis*) (endangered)
- Tricolored bat (*Perimyotis subflavus*) (proposed endangered)
- Monarch butterfly (*Danaus plexippus*) (proposed threatened)
- Jesup's milk-vetch (*Astragalus robbinsii* var. *jesupii*) (endangered)

No tree clearing is required for the proposed work, and bridge work has been continuous since the start of construction; therefore, a new bat-bridge assessment will not be required. The USFWS January 14, 2026 Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (D Key) was completed, resulting in a determination of may affect – not likely to adversely affect. Documentation is included elsewhere in the application package. Pertinent Avoidance and Minimization Measures (AMMs) include: 1.) Drilling or blasting producing noise or vibrations above existing background levels that affects suitable summer habitat for northern long-eared bat and tricolored bat, shall not occur during the Summer Occupancy season (Apr 15 – Sept 30); 2.) Any permanent or temporary artificial lighting that is used within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat shall be directed away from the forested habitat.

Suitable habitat for Jesup's milk-vetch does not occur within the areas of proposed impacts. Informal consultation with the USFWS was initiated on January 28, 2026 to request concurrence on a determination of Not Likely to Adversely Affect. Documentation is included elsewhere in the application package.

**4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?**

The project lies within the 100-year floodplain of the Connecticut River.

**4.2 Will compensatory flood storage be provided if the project results in a loss of flood storage?**

The project will not result in a loss of flood storage.

**5. For a minor or major project, a copy of the RPR shall be sent to the NH Division of Historical Resources.**

The NH Department of Transportation has coordinated with the NH State Historic Preservation Office (NH SHPO), and the Federal Highway Administration (FHWA), to locate and identify properties listed in or eligible for the National Register of Historic Places within the project area. Effects on cultural resources were determined based on the Section 106 review process established by the National Historic Preservation Act. It has been determined that the Proposed Action would result in No Historic Properties Affected.

## Photographs

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*Photo 1: On New Hampshire side, facing northwest, showing impact areas E, D and G (7/18/2025)*



*Photo 2: Facing New Hampshire side, facing east, showing impact areas D and E (7/18/2025)*



*Photo 3: Facing New Hampshire side, southeast bridge quadrant, impact areas A, B, C and G (07/07/2016)*



*Photo 4: Facing New Hampshire side, southeast bridge quadrant, impact areas A, B, C and G (10/03/2022)*



*Photo 5: Facing New Hampshire side, northeast bridge quadrant, impact areas D, E and F (10/03/2022)*



*Photo 6: NH bank in northeast bridge quadrant facing north, Impact area F (09/16/2005)*



*Photo 7: Upstream face of bridge, showing NH bank to the left and VT bank to the right (7/18/2025)*

## Construction Sequence

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**NH Department of Transportation  
Lebanon-Hartford, 16148**

**Construction Sequence**

Install perimeter controls around northern swale outlet.

Construct upstream/northern swale. Begin work by installing stone outlet at the Connecticut River end and work backward to tie into basin.

Remove northern swale perimeter controls.

Remove the temporary work trestles.

Install perimeter controls around bulkheads.

Reestablish grade behind the bulkheads. Remove bulkhead sheet piles once fill has been removed and grade reestablished.

Remove bulkhead perimeter controls.

Install perimeter controls around southern treatment swale outlet.

Construct southern treatment swale starting at the outlet at the Connecticut River and working inland.

Remove remaining perimeter controls when areas are stabilized.

## NHDES Shoreline Stabilization Form

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**BANK/ShORELINE STABILIZATION  
PROJECT-SPECIFIC WORKSHEET  
FOR STANDARD APPLICATION**

Water Division/Land Resources Management  
Wetlands Bureau

[Check the Status of your Application](#)



**RSA/Rule:** RSA 482/ Env-Wt 514

**APPLICANT LAST NAME, FIRST NAME, M.I.:** **New Hampshire Department of Transportation**

This worksheet summarizes the criteria and requirements for a Standard Permit for all types of “bank/shoreline stabilization” projects, as outlined in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Applications must meet the criteria and requirements listed in the [Standard Dredge and Fill Wetlands Permit Application form \(NHDES-W-06-012\)](#).

Do **not** use this worksheet if the project is located in a coastal (tidal) area (Env-Wt 509.02(b)).

**SECTION 1 - APPROVAL CRITERIA (Env-Wt 514.02)**

**An application for bank/shoreline stabilization must meet the following approval criteria:**

- The project must meet the applicable conditions established in Env-Wt 300.
- For a hard-scape stabilization proposal, such as rip-rap or a retaining wall, the applicant must demonstrate that the bank or shoreline in that location cannot be stabilized by preserving natural vegetation, landscaping, or bioengineering.
- Bank/shoreline stabilization must be designed to be the least intrusive practicable method in accordance with Chapter 8 of the [Wetlands Best Management Practice Techniques for Avoidance and Minimization \(A/M BMPs\)](#).
- Bank/shoreline stabilization must conform to the natural alignment of the bank/shoreline.
- Bank/shoreline stabilization must not adversely affect the stream course such that water flow will be transported by the stream channel in a manner that the stream maintains its dimensions, general pattern, and slope with no unnatural raising or lowering of the channel bed elevation along the stream bed profile.
- Bank/shoreline stabilization must not adversely affect the physical stream forms or alter the local channel hydraulics, natural stream bank stability, or floodplain connectivity.
- Bank/shoreline stabilization must avoid and minimize impacts to shoreline resource functions as described in Env-Wt 514.01 and Chapter 8 of the [A/M BMPs](#).
- If the project is a wall on a great pond or other surface water where the state holds fee simple ownership of the bed, bank/shoreline stabilization must locate the wall on the shoreward side of the normal high water line.
- If the project is to install rip-rap, bank/shoreline stabilization must locate the rip-rap shoreward of the normal high water line, where practicable, and extend it not more than two feet lakeward of that line at any point.
- The hierarchy of bank stabilization practices must be as follows:
  - (1) Soft vegetative bank stabilization, including regrading and replanting of slopes, in which all work occurs above ordinary high water or normal high water,
  - (2) Bioengineered bank stabilization or naturalized design techniques that uses a combination of live vegetation, woody material, or geotextile matting and may include regrading and replanting of slopes,

[irm@des.nh.gov](mailto:irm@des.nh.gov) or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO BOX 95, Concord, NH 03302-0095

[www.des.nh.gov](http://www.des.nh.gov)

- (3) Semi-natural form design shall be allowed only where the applicant demonstrates that anticipated turbulence, flows, restricted space, or similar factors, render vegetative or soft stabilization methods, bioengineering, and natural process design stabilization methods physically impractical,
- (4) Hard-scape or rip-rap design shall be allowed only where anticipated turbulence, flows, restricted space, or similar factors render vegetative, bio-engineering, semi-natural form design and diversion methods physically impractical and where necessary to protect existing infrastructure, and
- (5) Wall construction shall be allowed as the last available option, only where lack of space or other limitations of the site make alternative stabilization methods of bioengineering, seminatural, and rip-rap impractical. Wherever sufficient room exists, slopes shall be cut back to eliminate the requirement for a wall.

Stream bank-stabilization project plans must be developed in accordance with the following techniques, as applicable:

- Naturalized and semi-natural design techniques where practicable in accordance with the [Guidelines for Naturalized River Channel Design and Bank Stabilization](#) dated February 2007; R. Schiff, J.G. MacBroom, and J. Armstrong Bonin.
- For bioengineering projects, [National Engineering Handbook Part 654 \(NEH 654\), Technical Supplement 141, Streambank Soil Bioengineering](#), dated August 2007, USDA NRCS.
- For stream restoration projects, [NEH 654, Stream Restoration Design](#), dated August 2007, USDA NRCS.

## SECTION 2 - APPLICATION REQUIREMENTS FOR ALL BANK/SHORELINE STABILIZATION PROJECTS (Env-Wt 514.03)

An application for any bank/shoreline stabilization project must include:

A narrative and photos that:

- Describe and illustrate existing conditions and locations where shoreline vegetation currently exists.

Riprap is proposed on the bank of the Connecticut River, at the outlet of a proposed drainage pipe. The proposed riprap will prevent scour and erosion from occurring at the pipe outlet. This is the only location where riprap is proposed along the bank. The existing banks upstream and downstream from the bridge are primarily vegetated. Directly underneath the bridge, the banks generally consist of stone fill material that was installed when the bridge was originally constructed. Photos of the existing conditions are provided in the photo log included with this permit application.

- Identify all known causes of erosion to the bank/shoreline in that location.

None. The proposed riprap is associated with a proposed drainage outlet in order to prevent future erosion and stabilize banks at this location.

- Identify information and, for minor and major projects, engineering standards used to determine the appropriateness of the proposed bank stabilization treatment or practice.

The proposed stone apron will consist of Class C stone installed ovetop geotextile fabric. According to the NHDOT specifications Class C stone shall consist of clean, durable fragments of ledge rock of uniform quality, reasonably free from thin or elongated pieces. The stone shall be made from rock that is free from topsoil and other organic material. The stone shall be graded as follows:

Sieve Size	Percentage by Weight Passing
12 in	100
4 in	50-90
1-1/2 in	0-30
3/4 in	0-10

- Explain the design elements that have been incorporated to address erosion, by eliminating or minimizing the causes therefor.

Stone protection at pipe outlet: Given the high velocity of water that will be discharged from the pipe, stone is required to stabilize the bank at the pipe’s outlet. Stone protection at culvert outlets is a common, recommended practice for the prevention of scour. The proximity of the existing right-of-way line, steep roadway slopes, and access trail under the bridge contribute to the selection of the proposed outlet location as the most practical location.

- For minor and major bank/shoreline stabilization projects or minimum impact bioengineering stream bank projects, identify the flood risk tolerance of the proposed treatment or practice using the appropriate technical guidance or national engineering handbook.

The proposed riprap is associated with the stone apron at a proposed drainage outlet location. The intent of the stone material is to reduce scour and erosion from the proposed drainage outlet, and is not intended to provide bank stabilization associated with flows of the Connecticut River itself. The banks of the Connecticut River are otherwise stable at this location, and flood risk tolerance is not concern at this location. The riprap was appropriately sized based on the hydraulic analysis and engineering calculations.

A cross-section plan that shows:

- The difference in elevation between the lowest point of the bank/shoreline slope to be impacted by the construction and the highest point of the bank/shoreline slope to be impacted.
- The linear distance across the proposed project area as measured along a straight line between the highest and lowest point of the bank/shoreline slope to be impacted.
- The existing and proposed slope of the bank/shoreline.
- The normal high water line or ordinary high water mark, as applicable.

Hard-scape, rip-rap, or unnatural design plans that must include:

- Designation of minimum and maximum stone size.
- Gradation.
- Minimum rip-rap thickness.
- Type of bedding for stone.
- Cross-section and plan views of the proposed installation.
- A description of anticipated turbulence, flows, restricted space, or similar factors that would render vegetation and bioengineering stabilization methods physically impracticable.
- Engineering plans for rip-rap in excess of 100 linear feet along the bank or bed of a stream or river, including in-stream revetments, stamped by a professional engineer.
- If the project proposes rip-rap adjacent to great ponds or other surface waters where the state holds fee simple ownership to the bed, a stamped surveyed plan showing the location of the normal high water line and the footprint of the proposed project.

Design plans for a wall in non-tidal waters must include:

- Cross-section and plan views of the proposed installation and sufficient plans to clearly indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.
- If the application is for a wall adjacent to a great pond or other surface water where the state holds fee simple ownership to the bed, a surveyed plan, stamped by a licensed land surveyor, showing the location of the normal high water line and the footprint of the proposed project.

**SECTION 3 - DESIGN REQUIREMENTS FOR ALL BANK/ShORELINE STABILIZATION PROJECTS (Env-Wt 514.04)**

In addition to meeting all applicable requirements in Env-Wt 300, bank/shoreline stabilization must be designed to:

- Incorporate stormwater diversion and retention to minimize erosion.
- Retain natural vegetation to the maximum extent possible.
- If space and soil conditions allow, cut back unstable banks to a flatter slope and then plant with native, non-invasive trees, shrubs, and groundcover.
- Avoid and minimize impacts to adjacent properties and infrastructure.
- Avoid and minimize impacts to water quality.
- Avoid and minimize impacts to priority resource areas, avian nesting areas, fish spawning locations, and other wildlife habitat to meet the requirements of Env-Wt 514.02.
- Incorporate naturalized and semi-natural design techniques where practicable in accordance with [Guidelines for Naturalized River Channel Design and Bank Stabilization](#) dated February 2007, R. Schiff, J.G. MacBroom, and J. Armstrong Bonin.
- For bioengineering projects, be in accordance with [NEH 654, Technical Supplement 141, Streambank Soil Bioengineering](#), dated August 2007, USDA NRCS.
- For stream restoration projects, be in accordance with [NEH 654, Stream Restoration Design](#), dated August, 2007, USDA NRCS.

**SECTION 4 - CONSTRUCTION REQUIREMENTS FOR ALL BANK/ShORELINE STABILIZATION PROJECTS (Env-Wt 514.05)**

In addition to all applicable construction standards specified in Env-Wt 300, the following apply to all bank/ shoreline stabilization projects:

- Materials used to emulate a natural channel bottom must:
  - Be consistent with materials identified in the reference reach, and
  - Not include any angular rip-rap or gravel unless specifically identified on the approved plan.
- Bank restoration must be constructed, landscaped, and monitored in a manner that will create a healthy riparian or lacustrine shoreline system.
- Bank/shoreline stabilization areas must:
  - (1) Have at least 75% successful establishment of vegetation after two growing seasons, or
  - (2) Be replanted and re-established until a functional lacustrine, wetland, or riparian system has been reestablished in accordance with the approved plans.
- Unless otherwise approved, construction must be performed during low flow or dry conditions.
- Where there is documented occurrence of a cold water fishery or protected species or habitat, unless a waiver of this condition is issued in writing by the department in consultation with the New Hampshire Fish and Game Department, work must occur:
  - During low-flow or dry conditions during the growing season, and
  - Prior to October 1.

- Work authorized must be carried out in accordance with Env-Wt 307 such that there are no discharges in or to spawning or nursery areas during spawning seasons.
- Work authorized must be carried out in accordance with Env-Wt 307 such that controls are in place to protect water quality and appropriate turbidity controls such that no turbidity escape the immediate dredge area and must remain until suspended particles have settled and water at the work site has returned to normal clarity.
- Within 60 days of completion of construction, the applicant must submit a post-construction report that:
  - Has been prepared by a professional engineer, certified wetland scientist, or qualified professional, as applicable, and
  - Contains a narrative, exhibits, and photographs, as necessary to report the status of the project area and restored jurisdictional area.

**SECTION 5 - ON-GOING REQUIREMENTS FOR ALL BANK/SHORELINE STABILIZATION PROJECTS (Env-Wt 514.06)**

The owner must monitor the project and take corrective measures if the area is inadequately stabilized or restored by:

- (a) Replacing fallen or displaced materials without a permit, where no machinery in the channel is required,
- (b) Identifying corrective actions and follow-up plans in accordance with Env-Wt 307, and
- (c) Filing appropriate application and plans where work exceeds (a), above.

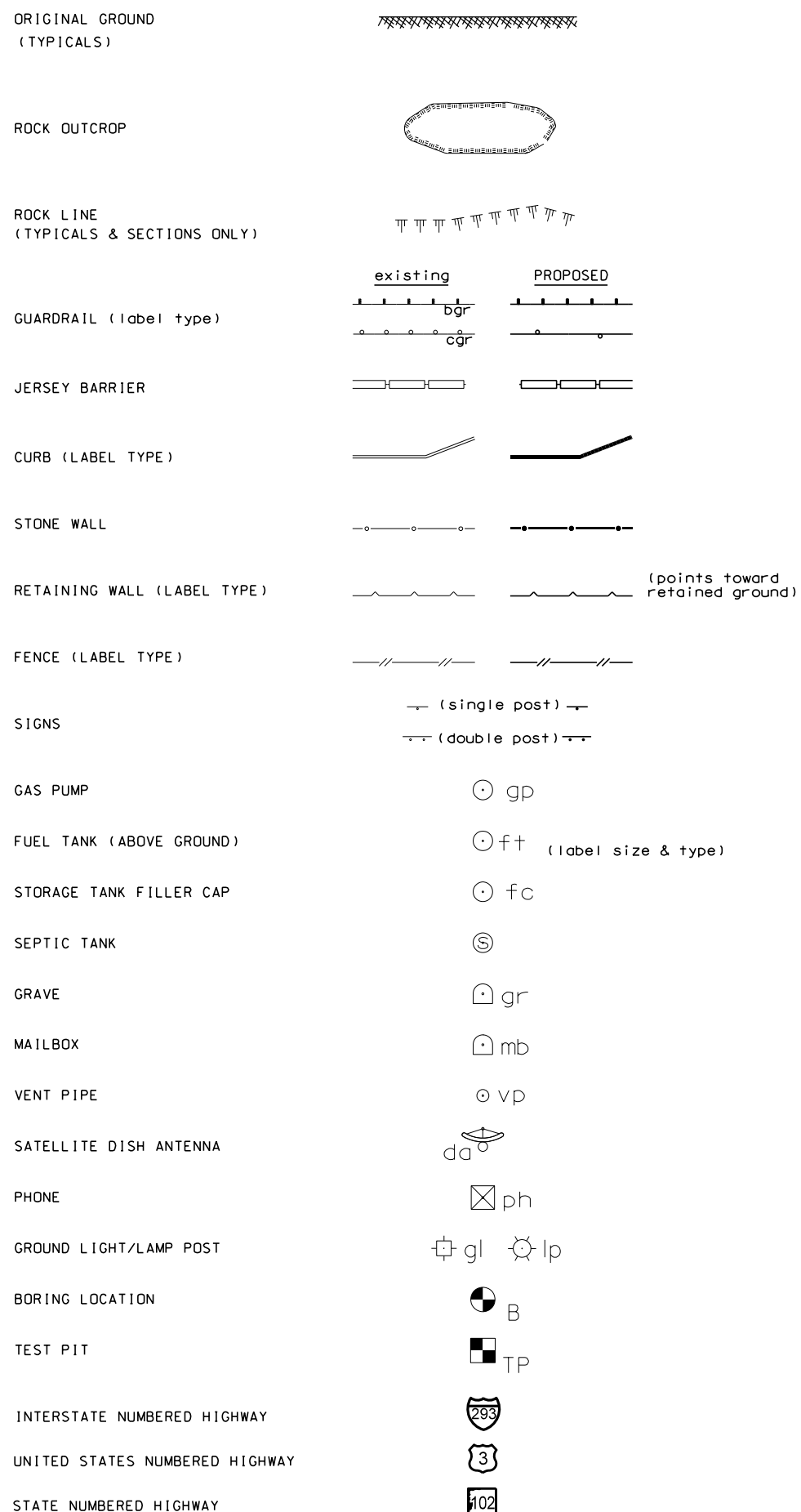
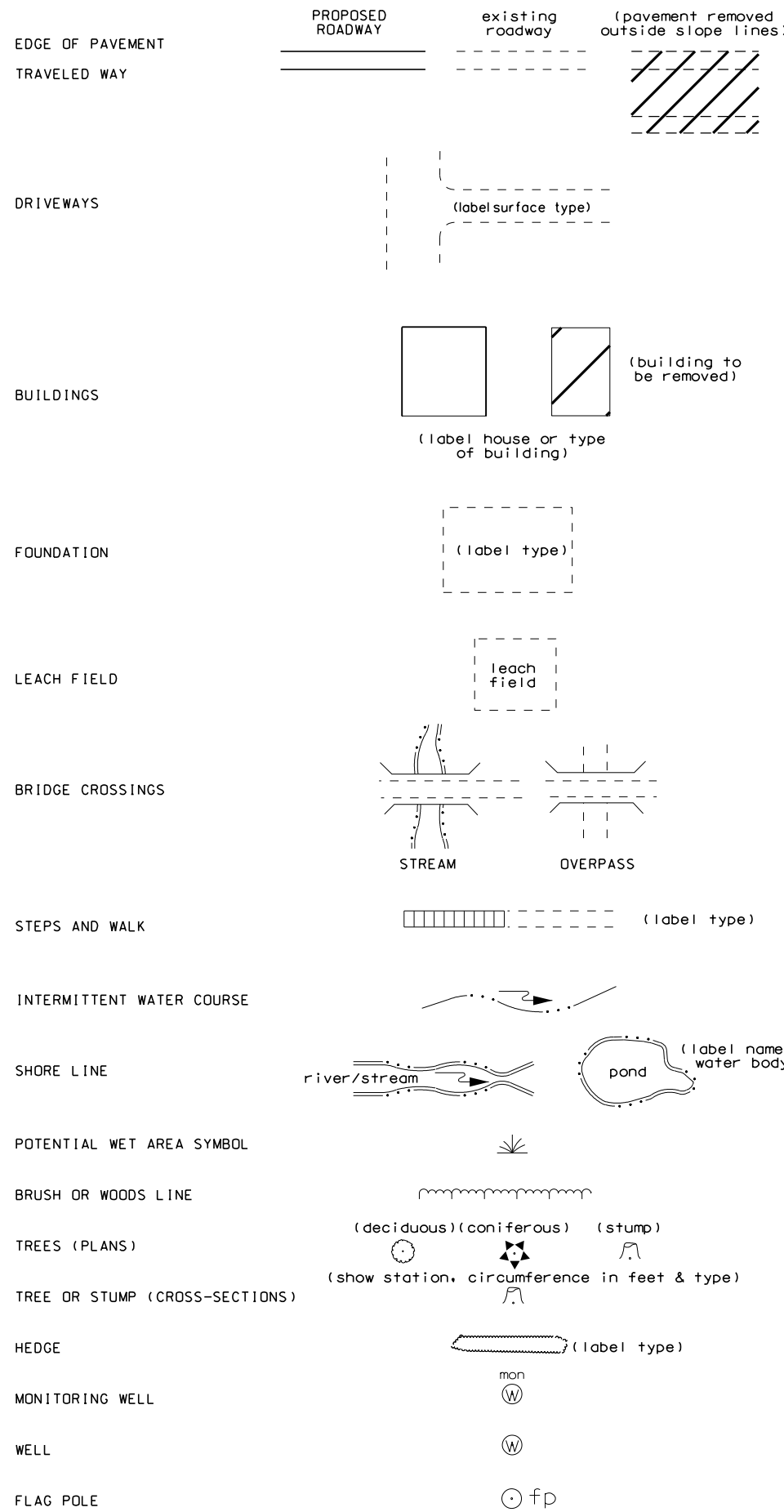
**SECTION 6 - BANK STABILIZATION CONSTRUCTION PROJECT CLASSIFICATION (Env-Wt 514.07)**

Refer to Env-Wt 514.07 for project classification.

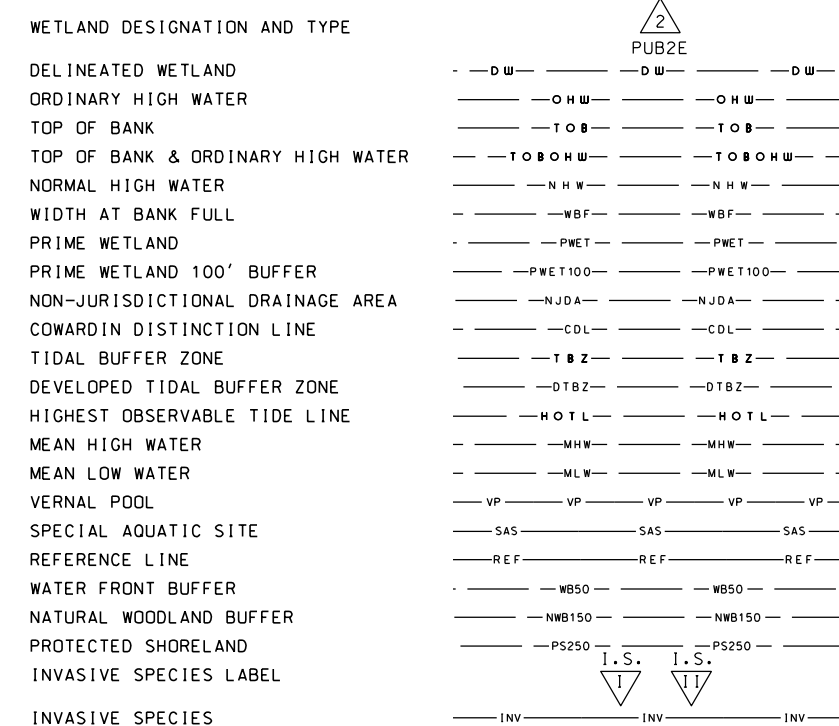
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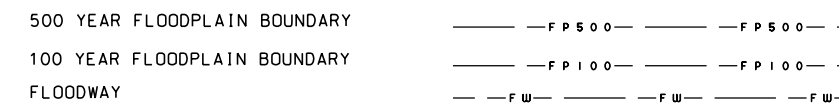
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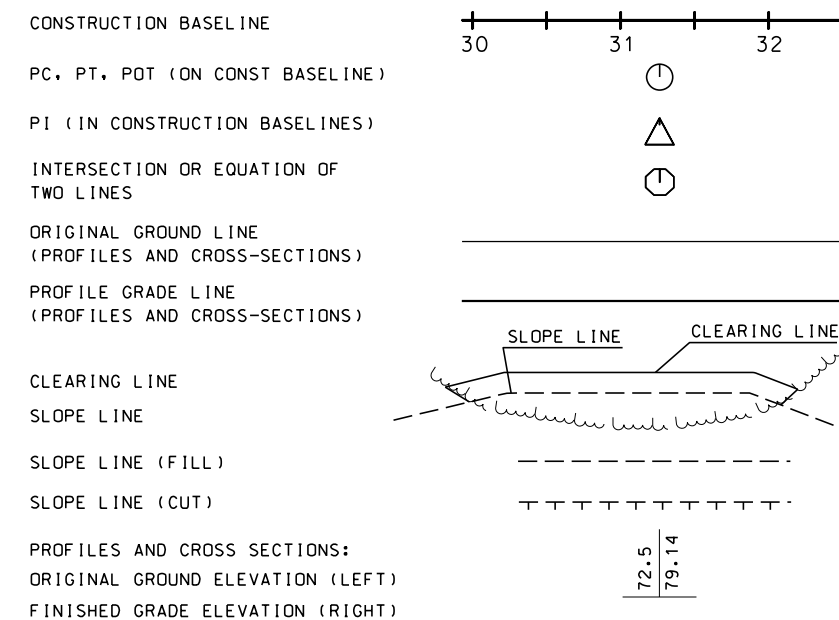
### SHORELAND - WETLAND



### FLOODPLAIN / FLOODWAY



### ENGINEERING

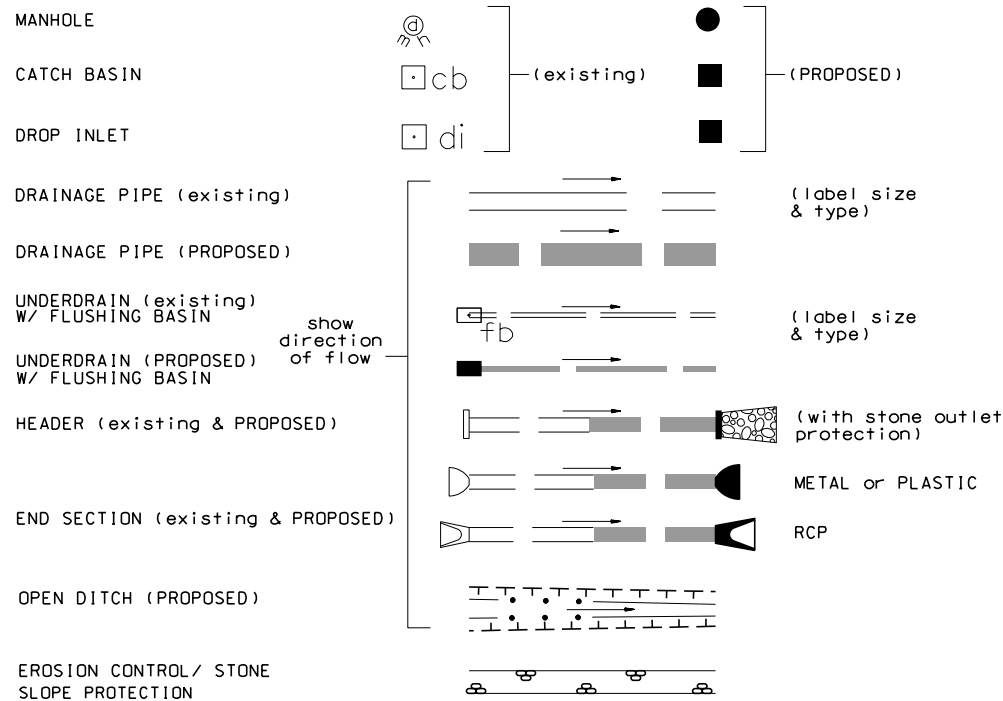


SHEET 1 OF 2

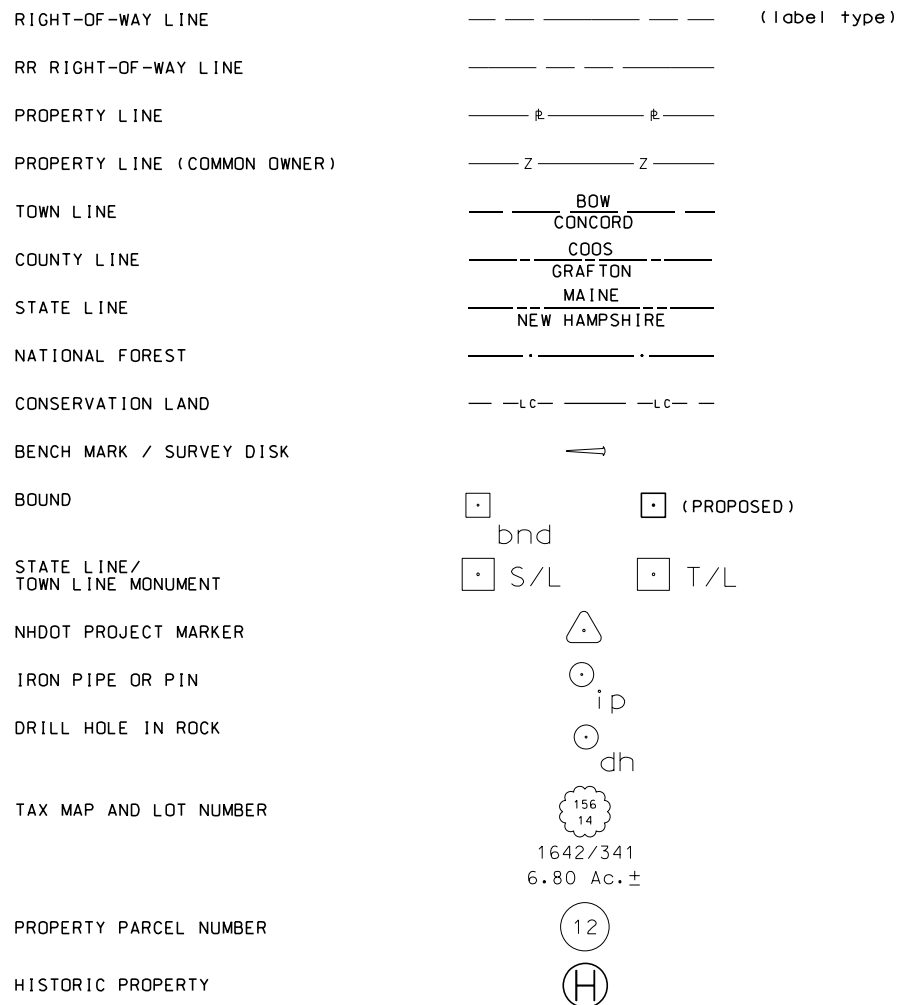
STATE OF NEW HAMPSHIRE  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN  
**STANDARD SYMBOLS**

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
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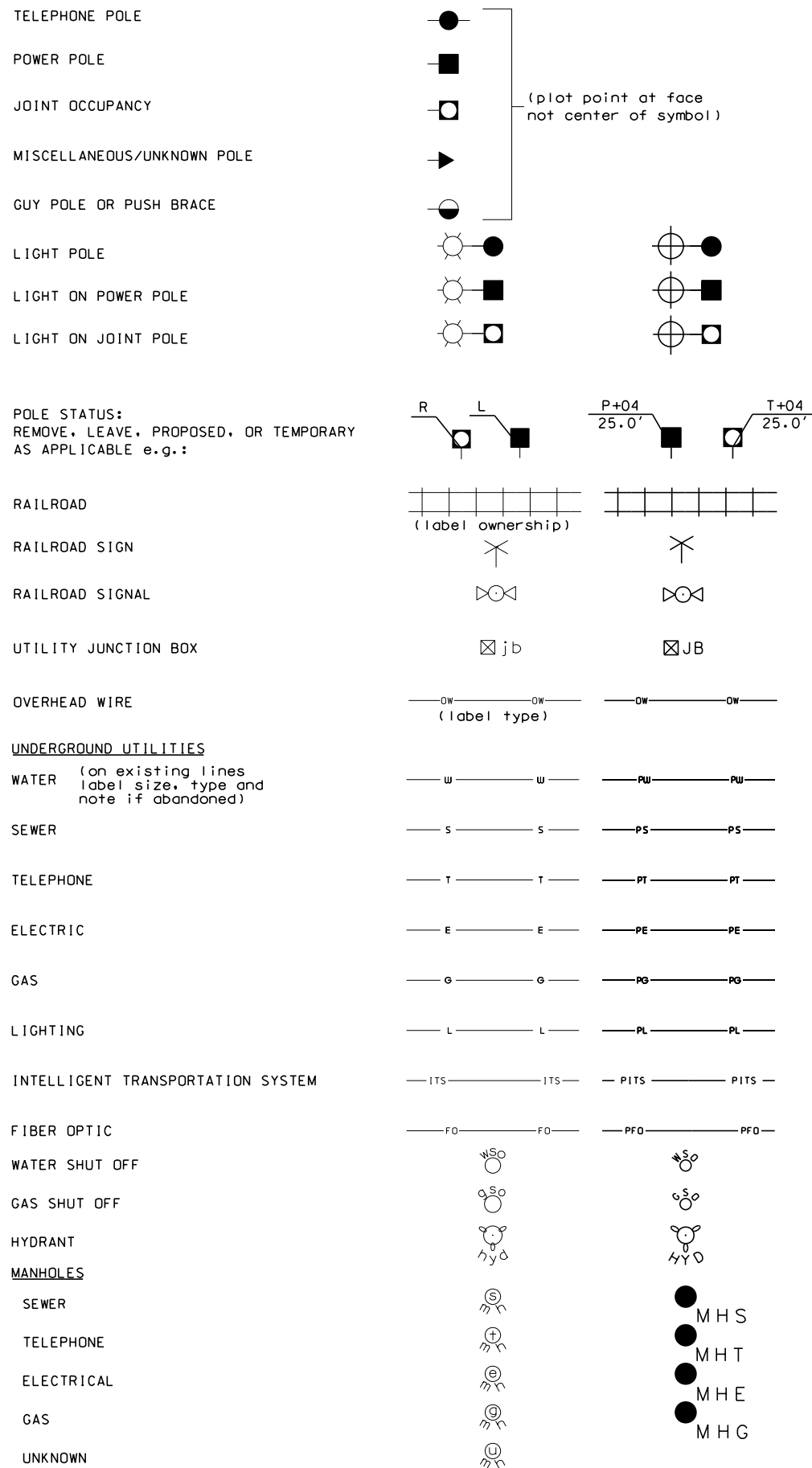
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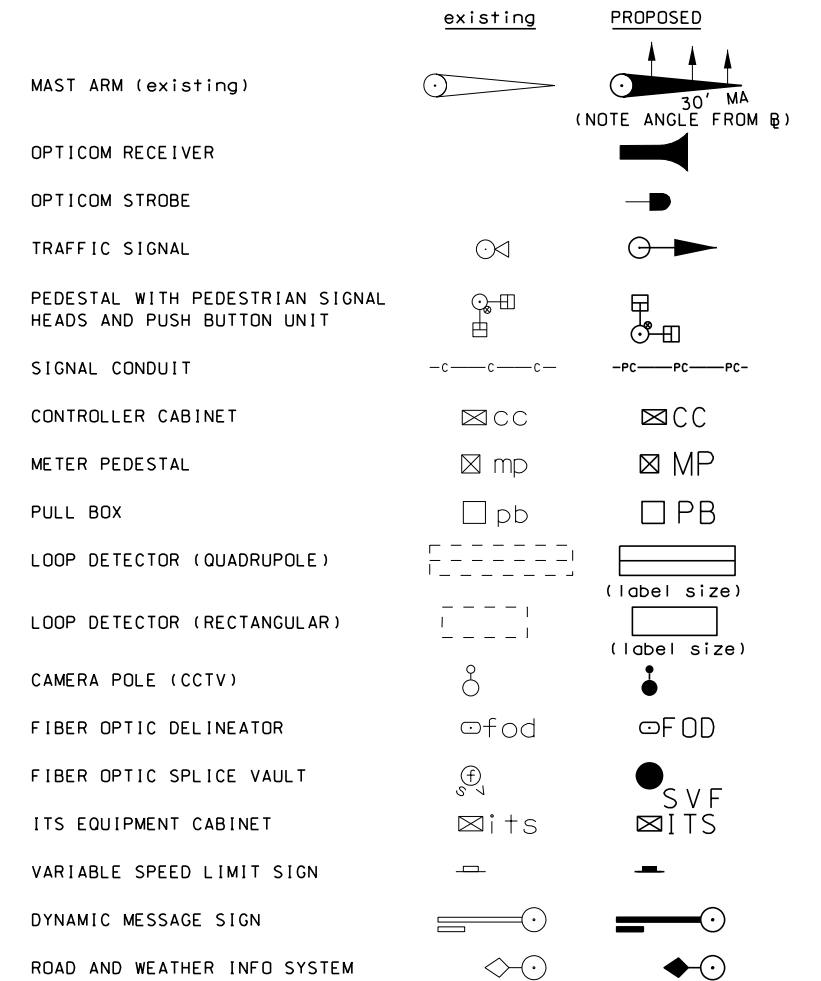
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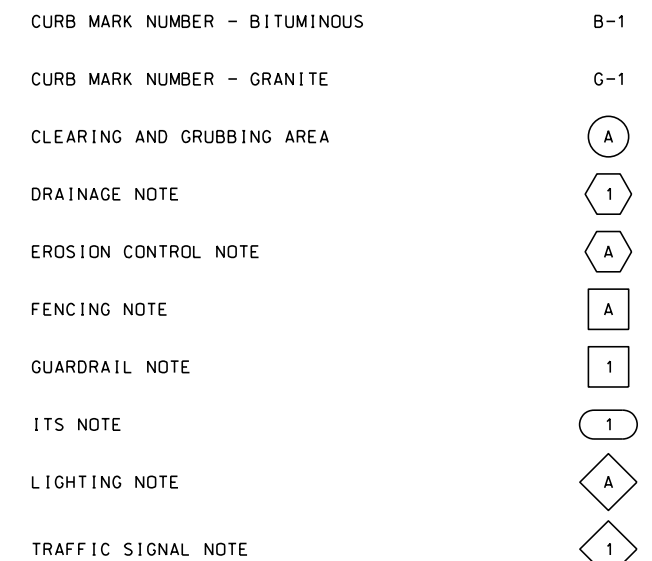
### UTILITIES



### TRAFFIC SIGNALS / ITS



### CONSTRUCTION NOTES



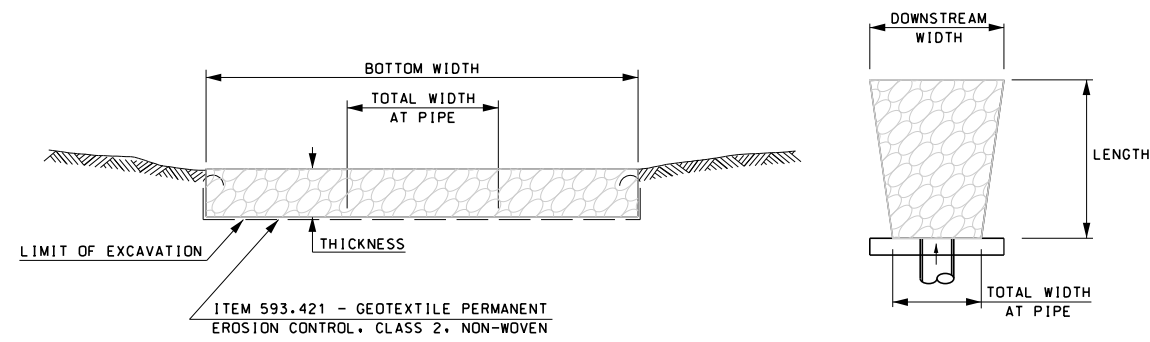
SHEET 2 OF 2

STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
<b>STANDARD SYMBOLS</b>				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	10430syml_2	16148	3	14

SDR PROCESSED	NHDDT	DATE	04-2015
NEW DESIGN	IMJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	DESCRIPTION
STATION	
STATION	
DATE	
NUMBER	

### STONE FILL PAD



LOCATION	LENGTH	TOTAL WIDTH AT PIPE	DOWNSTREAM WIDTH	STONE CLASS	THICKNESS
STA 824+87.0, RT 161.7'	12'	6'	14.8'	C	1.0

WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION			COMMENTS	
			PERMANENT				TEMPORARY		PERMANENT				
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)		SF	LF	BANK LEFT	BANK RIGHT	CHANNEL		
		SF	LF	SF	LF	SF	LF	LF	LF	LF			
2	BANK	A	579	45									
2	BANK	B					206	60					
3	R2UBH	C					871	54					
2	BANK	D					532	50					
2	BANK	E	44	14									
3	R2UBH	F					1237	33					
TOTAL			623	59			2,846	197					

NEW HAMPSHIRE IMPACTS  
 PERMANENT IMPACTS: 623 SF  
 TEMPORARY IMPACTS: 2,846 SF  
**TOTAL IMPACTS: 3,469 SF**

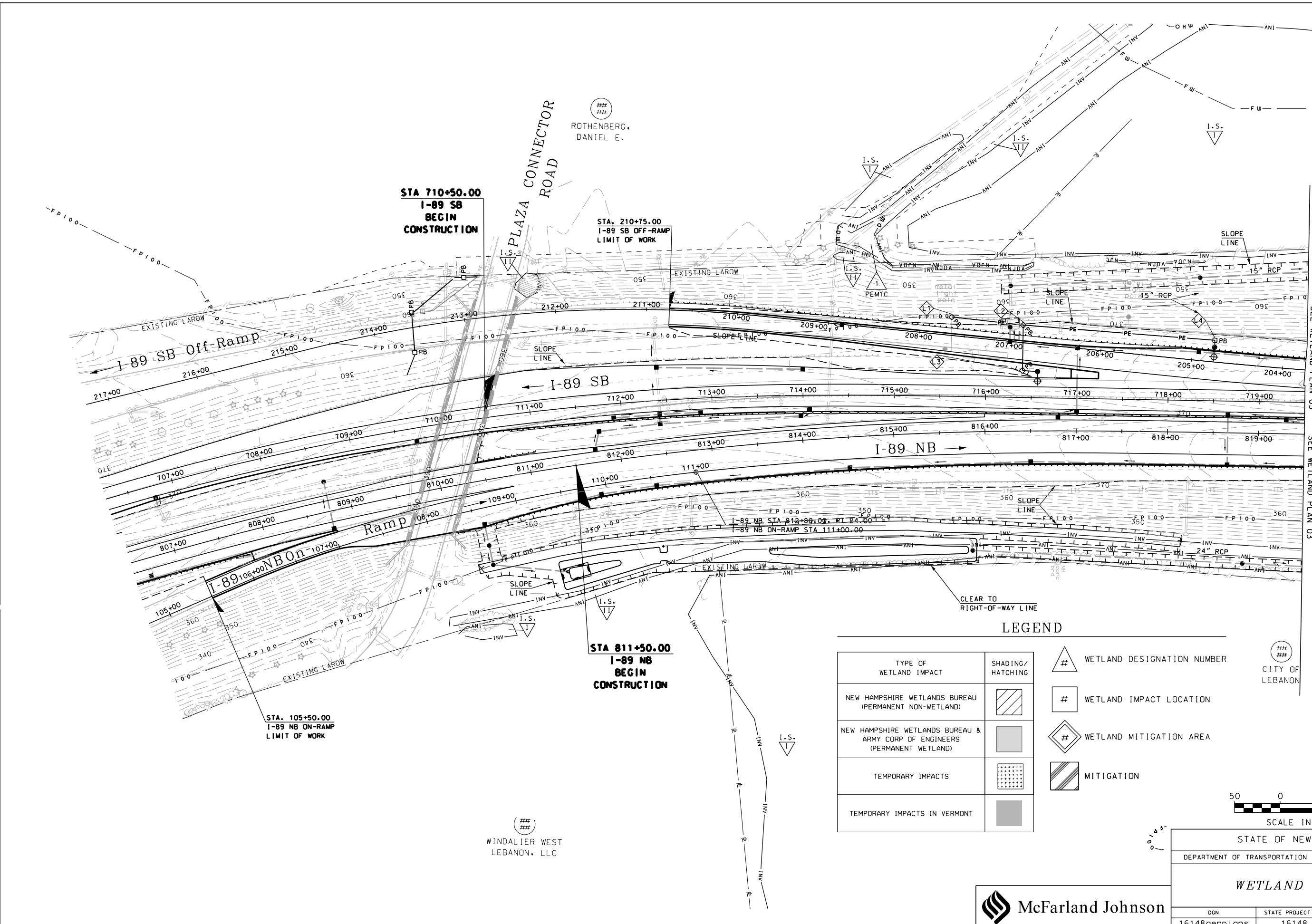
VERMONT IMPACTS  
 PERMANENT IMPACTS: 0 SF  
 TEMPORARY CHANNEL: 0 SF

Cowardin Classification  
 R2UBH (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded)

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>WETLAND IMPACT SUMMARY SHEET</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16148wetsum	16148	4	14



SDR PROCESSED	NHDDT	DATE	04-2015
NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	



MATCH LINE STA 719+50 SB MATCHLINE STA 819+50 NB  
SEE WETLAND PLAN 03  
SEE WETLAND PLAN 03

**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		# WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		# WETLAND MITIGATION AREA
TEMPORARY IMPACTS		
TEMPORARY IMPACTS IN VERMONT		



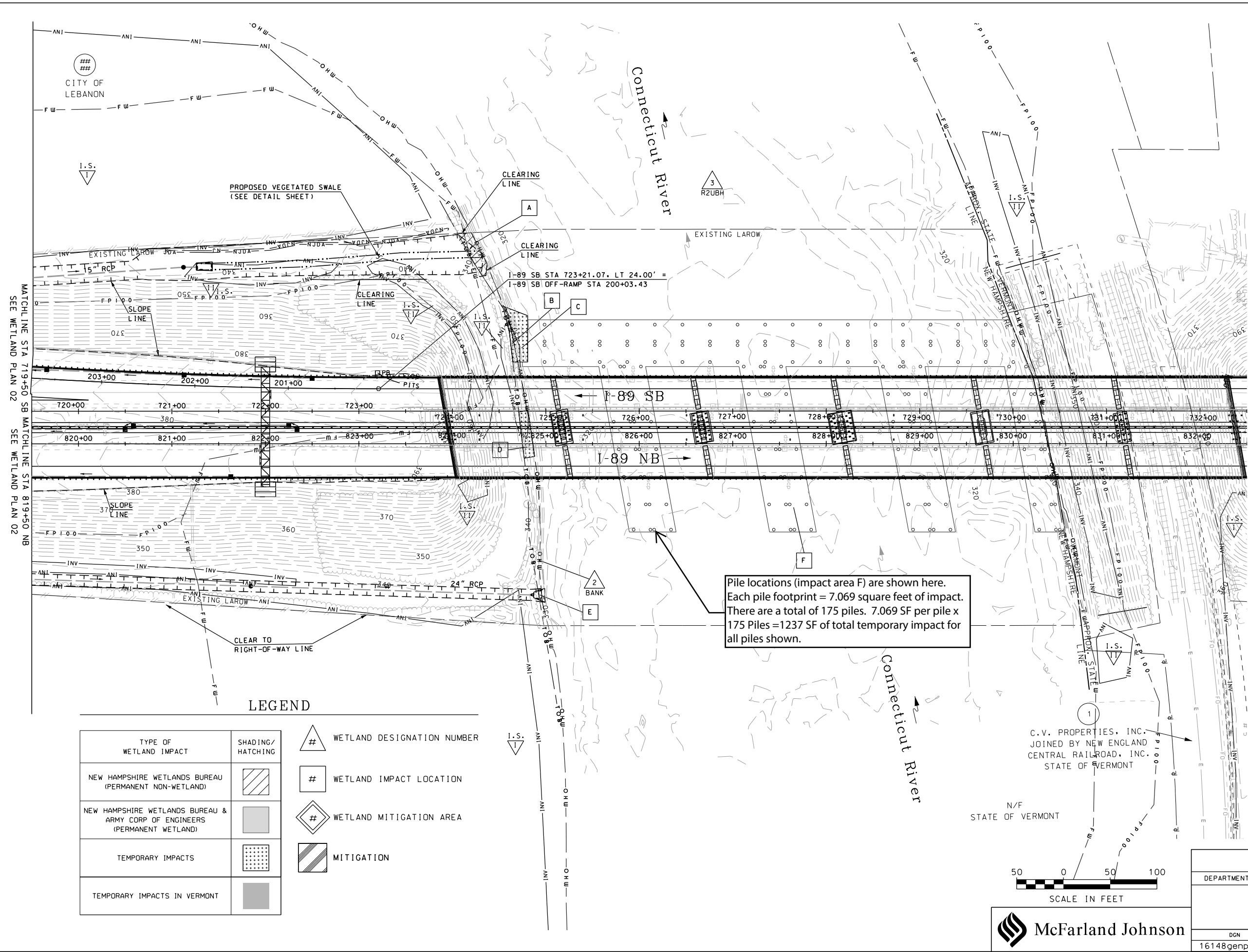
STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND PLAN 01**

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16148genplans	16148	5	14



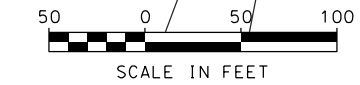
SDR PROCESSED	NHDDT	DATE	04-2015
NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	



Pile locations (impact area F) are shown here. Each pile footprint = 7.069 square feet of impact. There are a total of 175 piles. 7.069 SF per pile x 175 Piles = 1237 SF of total temporary impact for all piles shown.

**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		#
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		#
TEMPORARY IMPACTS		#
TEMPORARY IMPACTS IN VERMONT		#
		MITIGATION



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>WETLAND PLAN 02</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16148genplans	16148	6	14

# EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
  - 1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
  - 1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
  - 1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
  - 1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
  - 1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WO 1500 REQUIREMENTS ([HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM](http://des.nh.gov/organization/commissioner/legal/rules/index.htm))
  - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.
2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
  - 2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
  - 2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
  - 2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
  - 2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    - (A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    - (B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
    - (D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED
  - 2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
  - 2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
  - 2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
  - 2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30<sup>th</sup> AND MAY 1<sup>st</sup> OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
    - (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>th</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>th</sup>, SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
    - (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>th</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>th</sup>, SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
    - (C) AFTER NOVEMBER 30<sup>th</sup> INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
    - (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER STABILIZATION PLAN HAS BEEN APPROVED BY NHDOT.
    - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WO 1505.05) NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30<sup>th</sup>.

## GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
  - 3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
  - 3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
  - 3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
  - 3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
  - 3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.
4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
  - 4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
  - 4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
  - 4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1<sup>st</sup> THROUGH NOVEMBER 30<sup>th</sup>, OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.
5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
  - 5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.
  - 5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
  - 5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
  - 5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
  - 5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.
6. PROTECT SLOPES:
  - 6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
  - 6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
  - 6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
  - 6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.
7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
  - 7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
  - 7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.
8. PROTECT STORM DRAIN INLETS:
  - 8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
  - 8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
  - 8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
  - 8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.
9. SOIL STABILIZATION:
  - 9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
  - 9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
  - 9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR, IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
  - 9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:
  - 10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WO 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
  - 10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
  - 10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
  - 11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.
  - 11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
  - 11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.
  - 11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
  - 11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
  - 11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
  - 11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
  - 11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
  - 11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

## BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
  - 12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500; ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
  - 12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
  - 12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
  - 12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
  - 12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
  - 12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
  - 12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.
13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
  - 13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
  - 13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
  - 13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRICES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
  - 13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.
14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
  - 14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WO 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
  - 14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
  - 14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WO 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

**TABLE 1  
GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES**

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES <sup>2</sup>				ROLLED EROSION CONTROL BLANKETS <sup>3</sup>			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES <sup>1</sup>												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES	YES	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

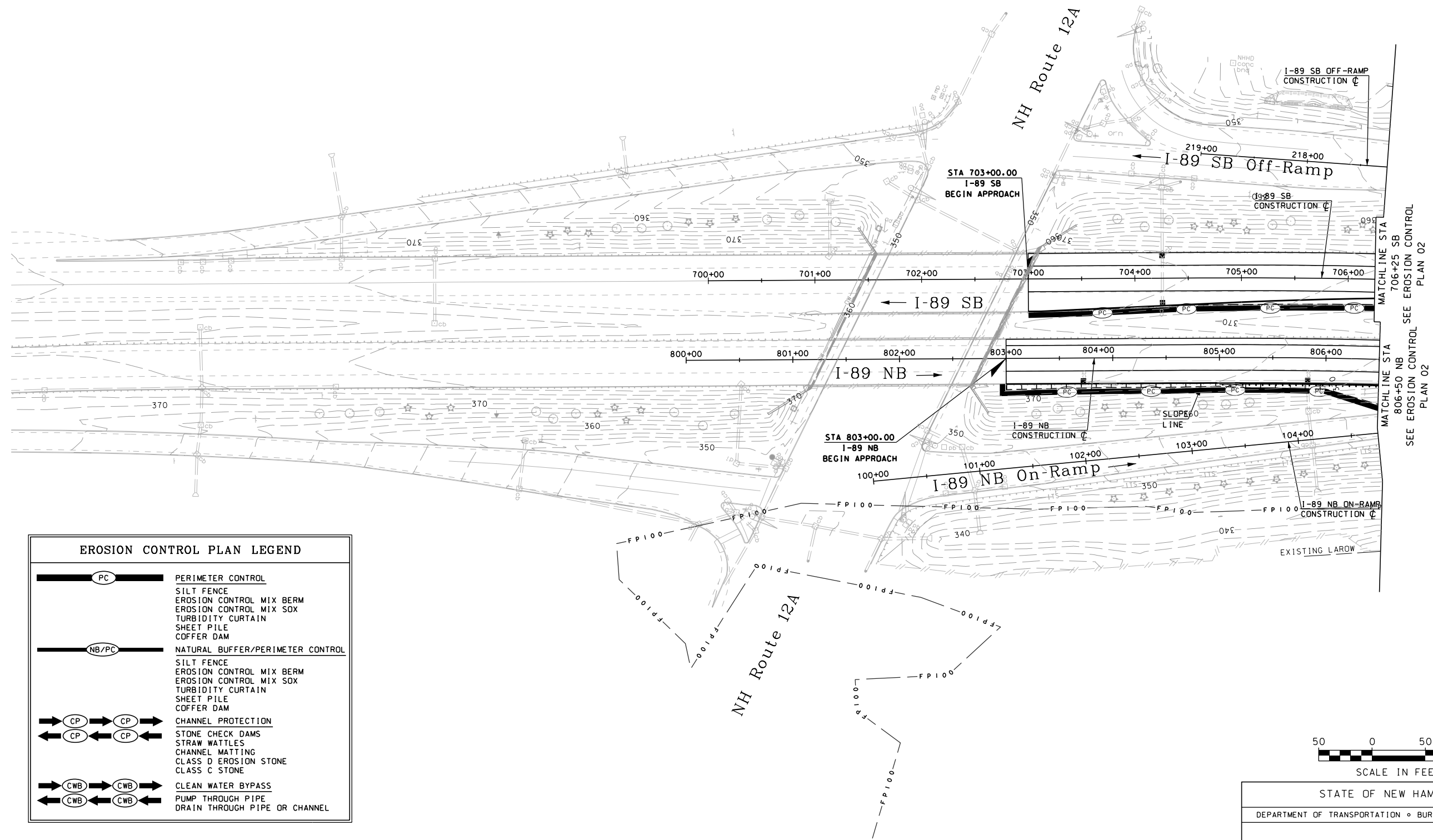
ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

- NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
  2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
  3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

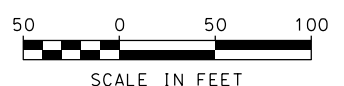
STATE OF NEW HAMPSHIRE				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
<i>EROSION CONTROL STRATEGIES</i>				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	16148eros <tr>.dgn</tr>	16148	7	14

SDR PROCESSED	NHDDOT	DATE	04-2015
NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION



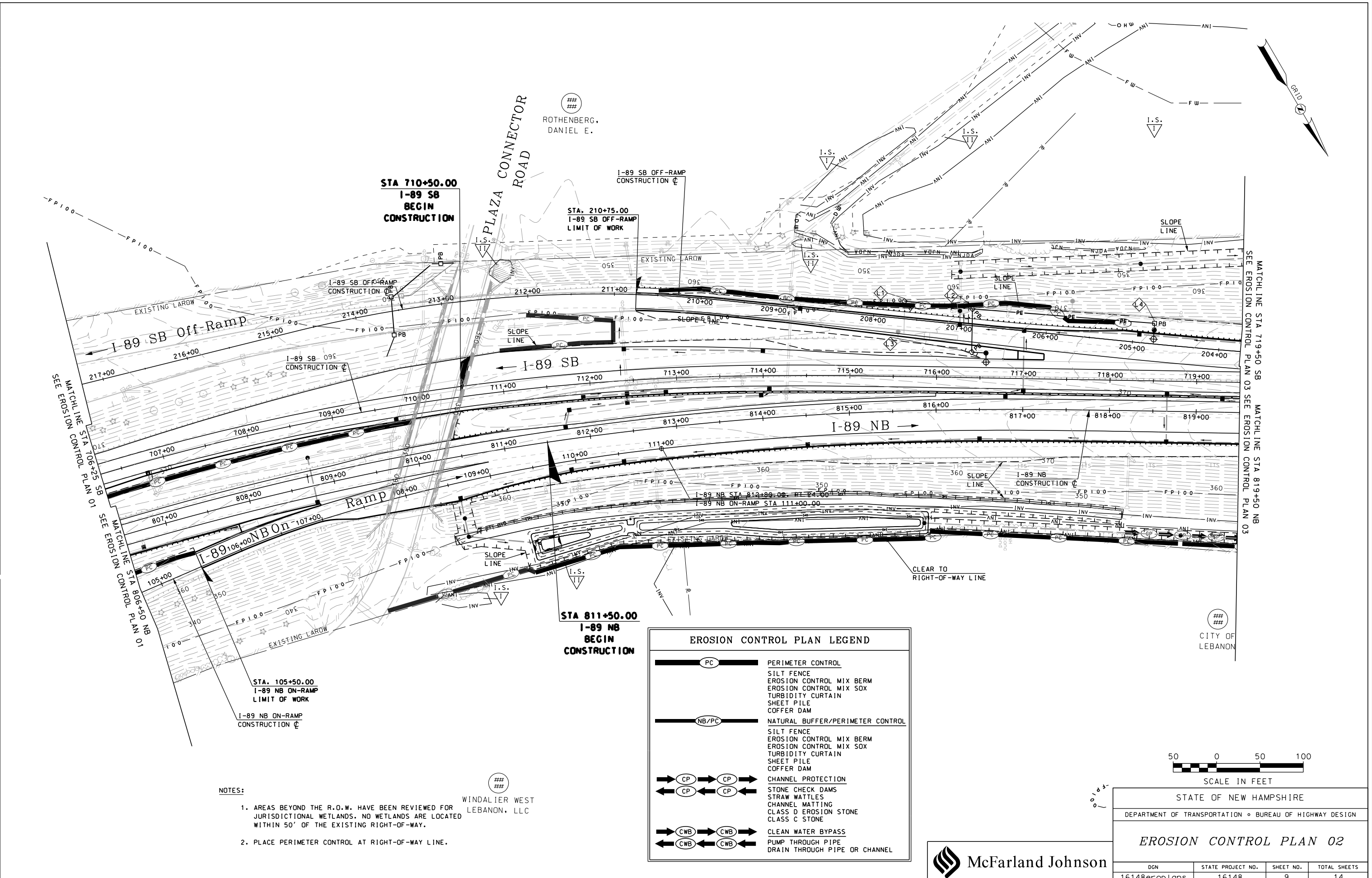
EROSION CONTROL PLAN LEGEND	
	<b>PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>NATURAL BUFFER/PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>CHANNEL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



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>EROSION CONTROL PLAN 01</b>			
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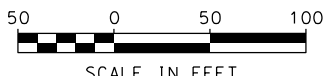
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NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	



REVISIONS AFTER PROPOSAL	DESCRIPTION
STATION	
STATION	
DATE	
NUMBER	

- NOTES:**
- AREAS BEYOND THE R.O.W. HAVE BEEN REVIEWED FOR JURISDICTIONAL WETLANDS. NO WETLANDS ARE LOCATED WITHIN 50' OF THE EXISTING RIGHT-OF-WAY.
  - PLACE PERIMETER CONTROL AT RIGHT-OF-WAY LINE.

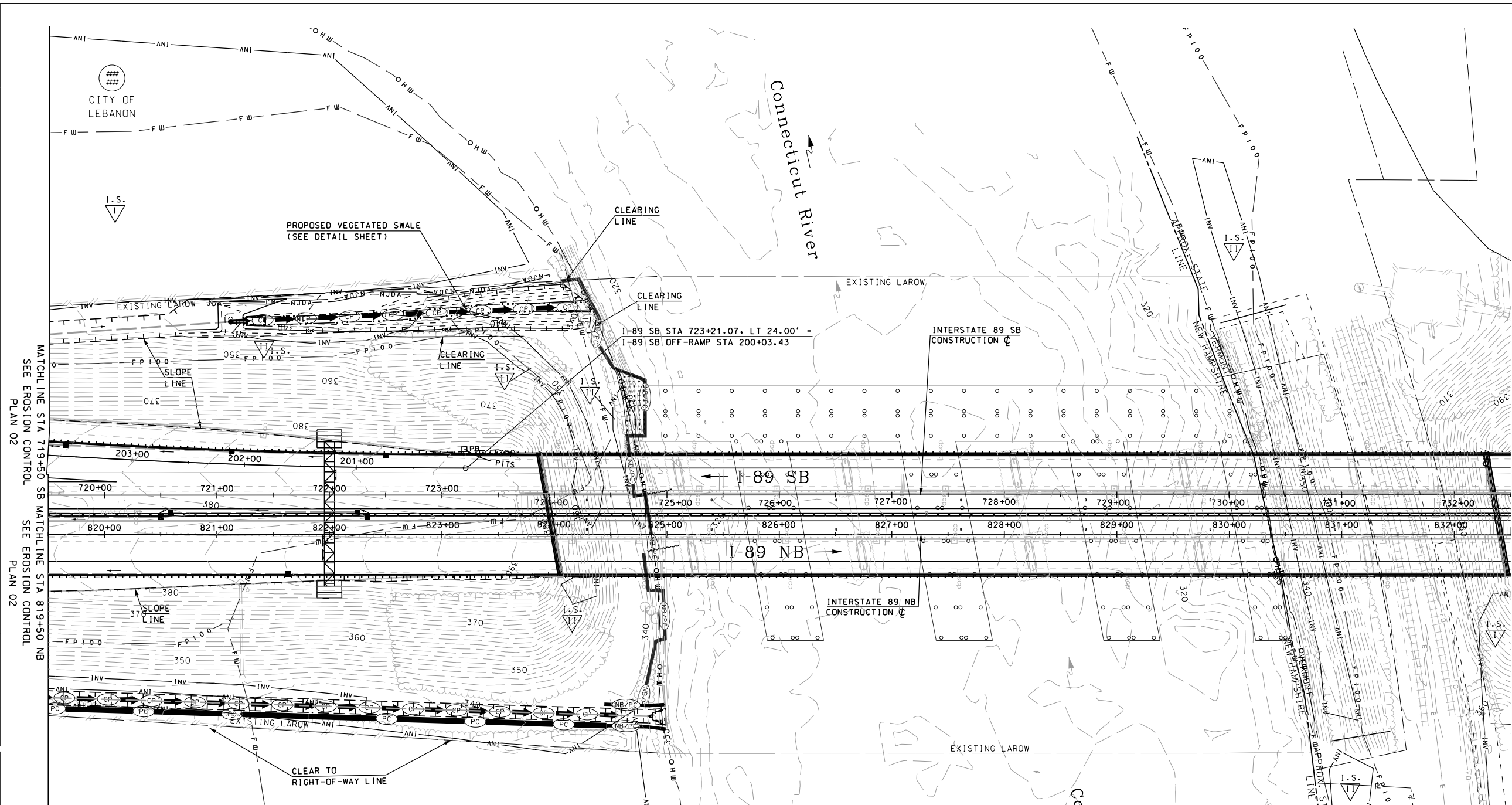
EROSION CONTROL PLAN LEGEND	
	<b>PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>NATURAL BUFFER/PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>CHANNEL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



STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>EROSION CONTROL PLAN 02</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
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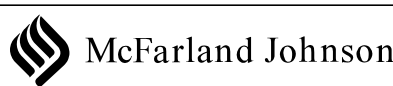


SDR PROCESSED	NHDDT	DATE	04-2015
NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	



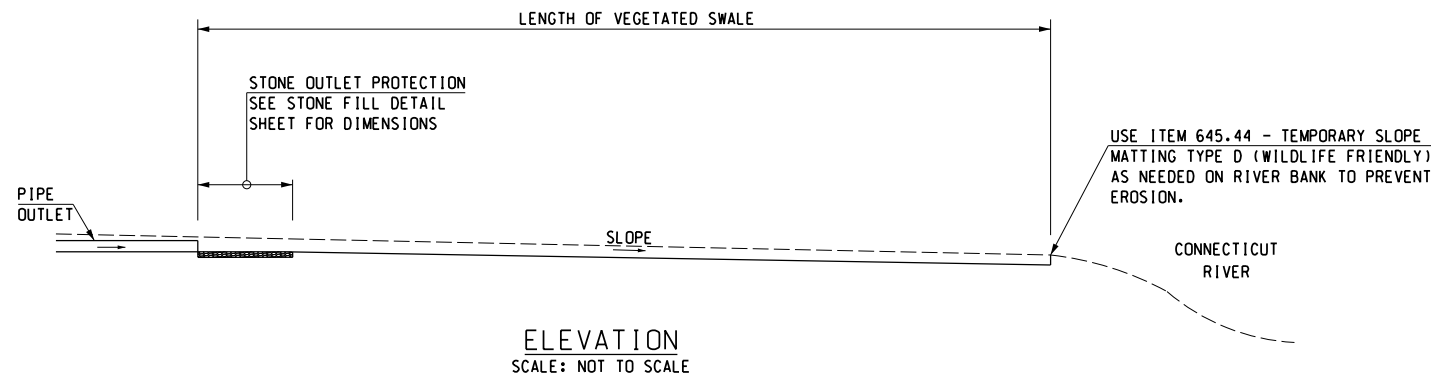
EROSION CONTROL PLAN LEGEND	
	<b>PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>NATURAL BUFFER/PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	<b>CHANNEL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

**NOTES:**  
1. AREAS BEYOND THE R.O.W. HAVE BEEN REVIEWED FOR JURISDICTIONAL WETLANDS. NO WETLANDS ARE LOCATED WITHIN 50' OF THE EXISTING RIGHT-OF-WAY.



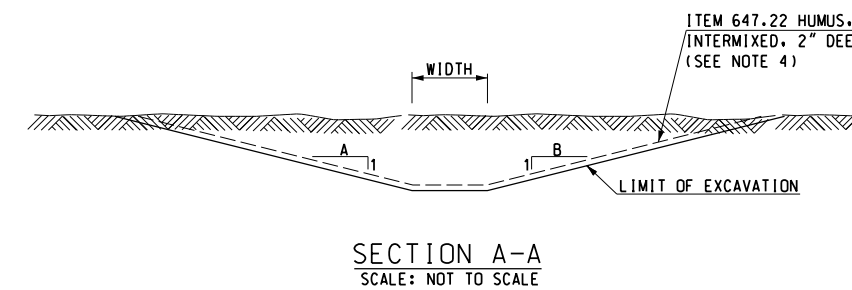
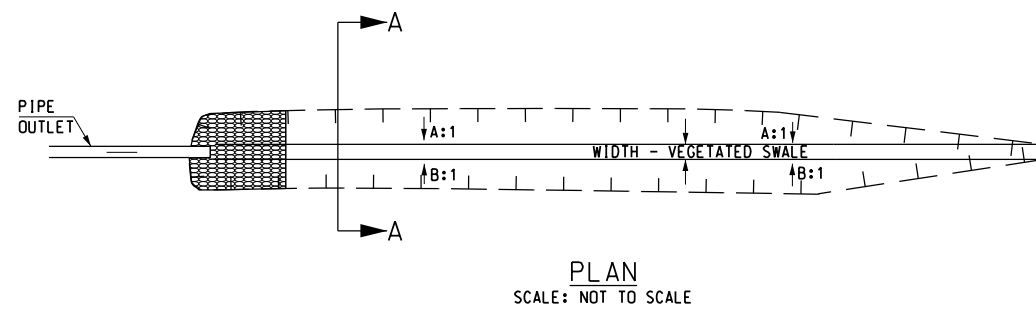
STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>EROSION CONTROL PLAN 03</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16148eroplans	16148	10	14

VEGETATED SWALE								
NUMBER	LOCATION	LENGTH (ft)	WIDTH (ft)	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	A	B
28	SB I-89 STA 721+12.4, LT	300	7	339.0	334.5	1.5%	3	3



**NOTES:**

1. CONTRACTOR MAY, AS REQUIRED, AND WITH APPROVAL OF ENGINEER, ADJUST THE PIPE OUTLET INVERTS AND SWALE INVERTS SHOWN ON THE PLANS TO ALLOW PROPER EROSION CONTROL PROTECTION AS SHOWN ON SHEETS.
2. ITEM 647.22 - HUMUS, INTERMIXED, 2" DEEP TO BE USED ON THE BOTTOM AND INNER SLOPES OF VEGETATED SWALES. ITEM 647.1 - HUMUS TO BE USED ON TOP OF BERMS AND OUTER SLOPES.
3. CONFORMING TO ITEM 644.82 - SALT-TOLERANT GRASS SEED TYPE 82 (PAID UNDER ITEM 646.31). SLOPES TO BE SEEDED IN ACCORDANCE WITH THE LANDSCAPING & SLOPE PROTECTION SUMMARY.



**VEGETATED TREATMENT SWALE**

SDR PROCESSED	NHDDT	DATE	04-2015
NEW DESIGN	MJ	DATE	04-2016
SHEET CHECKED	BRC	DATE	02-2018
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE			
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN			
<b>VEGETATED SWALE DETAILS</b>			
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
16148vsw1	16148	57	600

