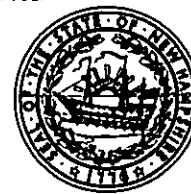




The State of New Hampshire
Department of Environmental Services



151

Robert R. Scott, Commissioner

June 9, 2020

His Excellency, Governor Christopher T. Sununu
 and The Honorable Council
 State House
 Concord, NH 03301

REQUESTED ACTION

Approve NH Department of Transportation Bureau of Bridge Design's request to amend Wetlands Permit #2018-02051 to read "Impact an additional 2,922 square feet of tidal buffer zone, a decrease of 636 square feet of tidal wetland impact, a decrease of 516 square feet of freshwater wetland impacts, and a decrease of 297 square feet of temporary impact to replace a 15 foot span bridge and 30 foot wide roadway with a 73 foot span bridge and 34 foot wide roadway." The permit was previously approved by Governor and Council on January 23, 2019, Item #89, and will not have significant impact on or adversely affect the values of Bunker Creek.

The New Hampshire Department of Environmental Services (NHDES) imposed the following conditions as part of this approval:

AMENDED CONDITIONS:

1. All work shall be in accordance with plans by the NH Department of Transportation (NHDOT) Bureau of Highway Design dated May 23, 2019, and revised through November 8, 2019 as received by the NH Department of Environmental Services (NHDES) on April 14, 2020. In addition, work shall be in accordance with the narrative by the NHDOT Bureau of Environment dated April 3, 2020 as received by the NHDES on April 13, 2020.
2. Prior to the start of construction, the applicant shall provide plans showing existing and proposed topography that clearly label contour lines. Plans stating "Preliminary Plans Subject to Change" shall be replaced with final plans meeting the permit conditions.
3. Stone slopes protecting the abutments shall be 1.5:1 or steeper.
4. Stone slopes protecting the road embankment fills into estuarine wetlands shall be 2:1 or steeper.
5. Prior to the start of construction, the applicant shall provide the details required for rip rap per rule Env-Wt 404.04 including plans stamped by a professional engineer.
6. Prior to the start of construction, the applicant shall provide a stamped surveyed plan showing the location of the normal high water shoreline and the footprint of the proposed project per rule Env-Wt 404.04
7. Prior to the start of construction, the applicant shall provide plans, details and specifications for establishing the natural substrate channel.
8. This permit is contingent upon the submission of a project specific stream diversion and erosion control plans to the NHDES Wetlands Bureau at least 10 working days in advance of the meeting to be held as required by permit condition #9. Those plans shall be complete and shall include details regarding the timing and method of stream flow diversion during construction, and shall show the temporary siltation, erosion and turbidity control measures to be implemented.
9. At least 48 hours prior to the start of construction, a pre-construction meeting shall be held with NHDES Land Resources Management Program staff at the project site, at the NHDES Office in Concord, N.H. or other mutually agreed upon location to review the conditions of this wetlands permit.

10. It shall be the responsibility of the permittee to schedule and coordinate the pre-construction meeting providing at least 5-day notice to the NHDES Wetlands Bureau and / or other Land Resources Management Program staff, and the meeting shall be attended by the permittee, the contract administrator(s), wetlands scientist(s), erosion control monitor, and the contractor(s) responsible for performing the work.
11. Construction monitoring reports shall be provided to the Wetlands Bureau file as determined at the pre-construction meeting to be held in accordance with condition #9.
12. Dredged material shall be placed out of the NHDES Wetlands Bureau's jurisdiction.
13. Construction equipment shall not be located within surface waters.
14. Discharge from dewatering of work areas shall be to sediment basins that are: a) located in uplands; b) lined with hay bales or other acceptable sediment trapping liners; and c) set back as far as possible from wetlands and surface waters, with a preferred undisturbed vegetated buffer of at least 50 feet and a minimum undisturbed vegetative buffer of 20 feet.
15. Appropriate siltation/erosion/turbidity controls shall be in place prior to construction, shall be maintained during construction, and shall remain until the area is stabilized.
16. Within three days of the last activity in an area, all exposed soil areas, where construction activities are complete, shall be stabilized by seeding and mulching during the growing season, or if not within the growing season, by mulching with tack on slopes steeper than 3:1 or netting/matting and pinning on slopes steeper than 2:1.
17. Where construction activities have been temporarily suspended within the growing season, all exposed soil areas shall be stabilized within 14 days by seeding and mulching, or if temporarily suspended outside the growing season, all exposed areas shall be stabilized within 14 days by mulching, mulching with tack on slopes steeper than 3:1, and stabilized by matting and pinning on slopes steeper than 2:1.
18. The contractor responsible for completion of the work shall utilize techniques described in the New Hampshire Stormwater Manual, Volume 3, Erosion and Sediment Controls During Construction (December 2008).
19. The limit of tree and shrub clearing shall be clearly marked prior to construction, and maintained until the project is stabilized.
20. Extreme precautions shall be taken within riparian areas to limit unnecessary removal of vegetation, and areas cleared of vegetation shall be revegetated as quickly as possible.
21. There shall be no further alteration to wetlands or surface waters without amendment of this permit.
22. Standard precautions shall be taken to prevent import or transport of soil or seed stock from nuisance, invading species such as purple loosestrife or Phragmites.
23. The impacts associated with the temporary work shall be restored immediately following construction.
24. Cofferdams shall not be installed during periods of high tidal water flow, whether due to seasonal runoff or precipitation. Once a cofferdam is fully effective, confined work can proceed without restriction.
25. Prior to commencing work on a substructure located within surface waters, a cofferdam shall be constructed to isolate the substructure work area from the surface waters.
26. Temporary cofferdams shall be entirely removed immediately following construction.
27. No work shall be conducted in tidal water between Feb. 15 and June 30.
28. The proposed stormwater management structures shall be installed and maintained to effectively absorb and infiltrate stormwater.
29. All activity shall be in accordance with the current Comprehensive Shoreland Protection Act, RSA 483-B.
30. This approval is contingent upon the receipt of an additional impact ARM Fund payment in the amount of \$5,584.25, bringing the total amount of compensatory mitigation paid to the ARM Fund to \$214,227.00. The amount of \$5,584.25 shall be received by the NHDES within 60 days of the amended approval date of this permit.

EXPLANATION

The NHDES approved this project on May 01, 2020. The NHDES supported its decision with the following findings:

AMENDED FINDINGS:

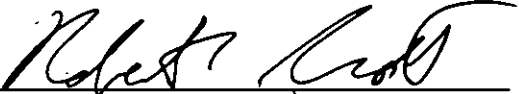
1. This is a major impact project per Administrative Rule Env-Wt 303.02(a), projects in tidal wetlands.
2. The NHDES finds the project to be for the public good as set out in RSA 482-A:1.
3. The applicant has provided evidence which demonstrates that this proposal is the alternative with the least adverse impact to areas and environments under the NHDES's jurisdiction per Env-Wt 302.03.
4. The applicant has demonstrated by plan and example that each factor listed in Env-Wt 302.04(a) Requirements for Application Evaluation, has been considered in the design of the project.
5. The NHDES has determined the applicant has met the purpose of the current stream rules relative to not causing damage upstream or downstream and not impeding aquatic organisms.
6. Natural Resource Agency meetings were held at the NHDOT on Nov. 20, 2013, Feb. 18, 2015 and Sept. 20, 2017 to coordinate the review and permitting of the project.
7. Although the road widening will impact the adjacent wetlands, the project will widen the flow path from 13 feet to a minimum width of 28 feet allowing for additional tidal flushing.
8. As the application states the project is a design- build and this approval is conditioned on the submittal and review of the detailed information required per Rule Env-Wt 500, Permit Procedure.
9. The Natural Heritage Bureau reported that rare plant surveys have been completed and none were found.
10. NH Fish and Game Department concluded that the project will not result in a negative impact to the species noted.
11. National Marine Fisheries recommended avoidance and minimization, impacts should accommodate predicted sea level rise, mitigation should be provided, and a time of year restriction from Feb. 15 to June 30 is preferred. They also noted a concern that Atlantic Sturgeon may be present. Accordingly, the design will include turbidity curtains excluding the Atlantic Sturgeon from the area. The application, plans and permit conditions address the comments presented.
12. In accordance with RSA 482-A:8, the NHDES finds that the requirements for a public hearing do not apply as the permitted project is not of substantial public interest, and will not have a significant impact on or adversely affect the values of the estuarine and palustrine resources, as identified under RSA 482-A:1.

MITIGATION FINDINGS:

1. The applicant has reviewed on-site options for mitigation, and the NHDES has determined this project is acceptable for payment to the ARM Fund.
2. Mitigation compensation is for impacts to 11,449 square feet of estuarine wetlands, 1,100 square feet of palustrine wetlands, and 23,341 square feet of tidal buffer zone.
3. The NHDES received a one-time ARM fund payment of \$208,862.54 prior to the amendment request. The approval of the amendment request is contingent upon receipt of an additional ARM Fund payment in the amount of \$5,584.46
4. The NHDES decision is issued in letter form. Upon receipt of the additional ARM fund payment in the amount of \$5,584.46, the NHDES shall issue a posting permit in accordance with Env-Wt 803.08(f).

Application file documents are being forwarded to the Governor and the Executive Council in connection with their consideration of this matter pursuant to RSA 482-A:3,II.(a) as it is a major project in public waters of the state.

We respectfully request your approval of this item.



Robert R. Scott
Commissioner



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management



Check the status of your application: www.des.nh.gov/onestop

COMPLETE	JUL 14 2018	2017-02-05 12:53:53 PM 20170205
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1. REVIEW/TIME: Indicate your Review Time below. (To determine review time, refer to Guidance Document A for instructions.)

Standard Review (Minimum, Minor or Major Impact) Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENTS: Mitigation is required if a Mitigation Pre-Application meeting must be held prior to submitting this Wetlands Permit Application. (No date, no Mitigation is Required, please refer to the Date of the Mitigation is Required Frequency Asked question.)

Mitigation Pre-Application Meeting Date: Month: 9 Day: 20 Year: 2017

N/A - Mitigation is not required

3. PROJECT LOCATION: Separate wetlands permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: US Route 4 TOWN/CITY: Durham

TAX MAP: N/A BLOCK: N/A LOT: N/A UNIT: N/A

USGS TOPO MAP WATERBODY NAME: Bunker Creek NA STREAM WATERSHED SIZE: 364 acres NA

LOCATION COORDINATES (if known): 70°53'9.197"W 43°7'59.359"N

4. PROJECT DESCRIPTION: Provide a brief description of the project including the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. **DO NOT** type "See Attached" in the space provided below.

The New Hampshire Department of Transportation (NHDT) is proposing to replace Bridge #145/116 over Bunker Creek on US Route 4 in the Town of Durham, NH. Bunker Creek is tidally influenced, discharging immediately south of the bridge into the north side of the Oyster River, which subsequently discharges into Little Bay.

5. SHORELINE FRONTAGE:

NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT: Please indicate if any of the following permit applications are required and, if required, the status of the application. To determine if other Land Resources Management Permits are required refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Individual Sewerage Disposal per RSA 485-A:2	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Subdivision Approval Per RSA 485-A	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input type="checkbox"/> PENDING <input type="checkbox"/> DENIED
Shoreland Permit Per RSA 483-B	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	_____	<input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> PENDING <input type="checkbox"/> DENIED

7. NATURAL HERITAGE BUREAU DESIGNATED RIVERS: See the instructions for Required Attachments document for instructions to complete below.

a. Natural Heritage Bureau File ID: NHB 17 - 2706

b. Designated River the project is in ¼ miles of _____; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: ___ Day: ___ Year: ___

N/A

lrm@des.nh.gov or (603) 271-2147
NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

8. APPLICANT INFORMATION (Do not include in public release)

LAST NAME, FIRST NAME, M.I.: Adams, Joseph C.

TRUST / COMPANY NAME: NHDOT MAILING ADDRESS: 7 Hazen Drive

TOWN/CITY: Concord STATE: NH ZIP CODE: 03302

EMAIL or FAX: PHONE:

X ELECTRONIC COMMUNICATION: By Initialing here: LRL I hereby authorize NHDES to communicate all matters relative to this application electronically.

9. PROPERTY OWNER INFORMATION (Do not include in public release)

LAST NAME, FIRST NAME, M.I.: NHDOT OF TRANS

TRUST / COMPANY NAME: MAILING ADDRESS:

TOWN/CITY: STATE: ZIP CODE:

EMAIL or FAX: PHONE:

ELECTRONIC COMMUNICATION: By Initialing here: LRL I hereby authorize NHDES to communicate all matters relative to this application electronically.

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: Chase, Vicki COMPANY NAME: Normandeau Associates, Inc.

MAILING ADDRESS: 25 Nashua Road

TOWN/CITY: Bedford STATE: NH ZIP CODE: 03110

EMAIL or FAX: vchase@normandeau.com PHONE: 603-637-1111

ELECTRONIC COMMUNICATION: By Initialing here: VBC I hereby authorize NHDES to communicate all matters relative to this application electronically.

11. PROPERTY OWNER SIGNATURE

See this information & Required Attachments document for clarification of the below statements.

By signing the application, I am certifying that:
1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

X Property Owner Signature [Signature] L. Robert Landry Print name legibly 7/5/2018 Date

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

MUNICIPAL SIGNATURES

7. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application and:
 1. Waives its right to intervene per RSA 482-A:11
 2. Believes that the application and submitted plans accurately represent the proposed project, and
 3. Has no objection to permitting the proposed work.

	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the Conservation Commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained prior to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

8. TOWN/CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014) I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK

Per RSA 482-A:3.1

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council) and the Planning Board, and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

IMPACT AREA
 For each jurisdictional area that will be impacted, provide square feet and / or applicable linear feet of impact.
 (Remaining impacts that will remain after the project is complete)
 (Temporary impacts not intended to remain and will be removed or return to construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Scrub-shrub wetland		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Emergent wetland	1,616	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Wet meadow		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Intermittent stream		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Perennial Stream / River	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Intermittent stream	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Perennial stream / River	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Bank - Lake / Pond	/	<input type="checkbox"/> ATF	/	<input type="checkbox"/> ATF
Tidal water	8,260 / 665	<input type="checkbox"/> ATF	1,981 / 75	<input type="checkbox"/> ATF
Salt marsh	3,825	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Sand dune	12,085	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Prime wetland		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Prime wetland buffer		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)	20,419	<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Previously developed upland in TBZ	27,075	<input type="checkbox"/> ATF	25,581	<input type="checkbox"/> ATF
Docking - Lake / Pond		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - River		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Docking - Tidal Water		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
Vernal Pool		<input type="checkbox"/> ATF		<input type="checkbox"/> ATF
TOTAL	34,120 / 665		27,562 / 75	

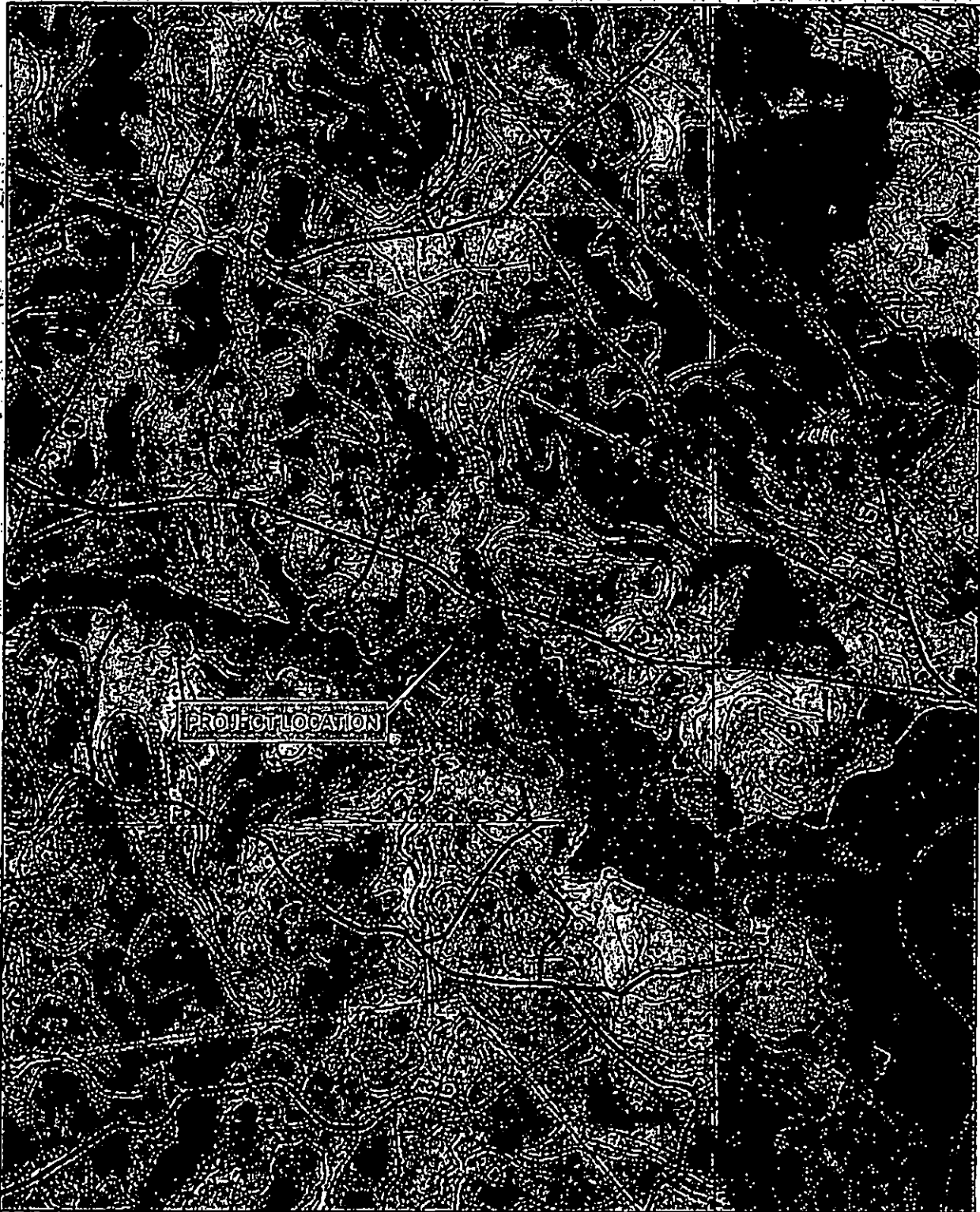
16. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction.

Minimum Impact Fee: Flat fee of \$ 200

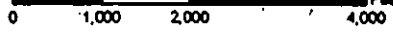
Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	61,682 sq. ft.	X \$0.20 =	\$ 12,336.40
Temporary (seasonal) docking structure:	sq. ft.	X \$1.00 =	\$
Permanent docking structure:	sq. ft.	X \$2.00 =	\$
Projects proposing shoreline structures (including docks) add \$200 =			\$
Total =			\$

The Application Fee is the above calculated Total or \$200, whichever is greater = **\$ 10,000**



PROJECT LOCATION



N



NHDOT

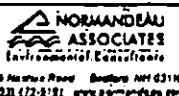
DURHAM, NEW HAMPSHIRE

16236

EXHIBIT A - PROJECT LOCATION

Date: 1/27/2017
 Drawn by: [illegible]
 Project No: 23164-001

SCALE: 1:24,000



APRIL 2016

Exhibit D



NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

Memo

To: Vicki Chase, Normandeau Associates
25 Nashua Road
Bedford, NH 03301-5022

From: Amy Lamb, NH Natural Heritage Bureau
Date: 8/31/2017 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB17-2706
cc: Kim Tuttle

Town: Durham

Location: US Route 4

Description: NHDOT Proposes to replace the bridge carrying US Route 4 over Bunker Creek in Durham

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results:

~~Comments: (Systemic) NHB 17-2706. Note that some of the records listed below are from the same area as the proposed project. These records were found in the NHB database and are not necessarily from the project area.~~

Natural Community

Brackish marsh*

State Federal Notes

Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

High salt marsh*

Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

Sparsely vegetated intertidal system

Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

Subtidal system

Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

Plant species

crested sedge (*Carex cristatella*)*

State Federal Notes

E

This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Memo



NH NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

stormwater runoff, and sedimentation from nearby disturbance.

Vertebrate species

New England Cottontail (*Sylvilagus transitionalis*)

State¹ Federal Notes

E

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Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community of 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 more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

0-0,050,10,50,20,25
Miles



NHB17-2706

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

New Hampshire Natural Heritage Bureau - Community Record
Brackish marsh

Legal Status

Federal: Not listed
 State: Not listed

Conservation Status

Global: Not ranked (need more information)
 State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank:

Detailed Description: 1996: Robust stands of both *Carex palleacea* (salt marsh sedge) and *Typha angustifolia* (narrow-leaved cattail) were found here, along with lesser quantities of *Spartina pectinata* (salt slough grass), *Aster novi-belgii* (New York aster), and *Scirpus maritimus* (salt marsh bulrush).

General Area: 1996: Bunker Creek drains a small tributary watershed of the tidal portion of the Oyster River. The *brackish marsh* is bordered by a moderately sized tidal salt marsh downstream. Immediately behind the *brackish marsh* an extensive stand of *Scirpus expansus* (expansive bulrush) was observed. This sedge is typically found in somewhat enriched conditions.

General Comments:
 Management
 Comments:

Location

Survey Site Name: Bunker Creek
 Managed By: Johnson and Bunker Creeks

County: Strafford
 Town(s): Durham
 Size: .9 acres

Elevation: 14 feet

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

Directions: From the intersection of Rte. 4 and Rte. 108 near Durham, proceed east ca. 1.25 miles to Bunker Creek. Site is ca. 0.5 miles north of the road, at the head of the creek at the fresh-salt water interface.

Dates documented

First reported: 1996-09-19 Last reported: 1996-09-19

New Hampshire Natural Heritage Bureau - Community Record

High salt marsh

Legal Status

Federal: Not listed

State: Not listed

Conservation Status

Global: Not ranked (need more information)

State: Rare or uncommon

Description at this Location

Conservation Rank: Historical records only - current condition unknown.

Comments on Rank: Moderately small relative to other examples in Great Bay, but in good condition and largely bordered by undeveloped land.

Detailed Description: 1996: Typical *high* and *low salt marsh* species (e.g., *Spartina alterniflora* (cordgrass) and *Spartina patens* (salt meadow-grass)) are found here, although a thorough botanical survey was not undertaken.General Area: 1996: Bunker Creek drains a small tributary watershed of the tidal portion of the Oyster River. The western shore is bordered primarily by abandoned farm fields of the Bunker family farm, with some early successional forest towards the northern end of the salt portion of the creek. The eastern side has a few houses set back approximately 100 m (several hundred feet) from the marsh edge. A dry oak forest with small ledges on an abrupt slope borders this side of the creek. At the head of the creek there is a fresh-salt water interface with a well developed *brackish marsh*.

General Comments:

Management

Comments:

Location

Survey Site Name: Bunker Creek

Managed By: Palmer Tract

County: Strafford

Town(s): Durham

Size: 11.3 acres

Elevation: 14 feet

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

Directions: From the intersection of Rte. 4 and Rte. 108 near Durham, proceed east ca. 1.25 miles. Site extends north from the confluence of Bunker Creek and the Oyster River for ca. 0.3 miles.

Dates documented

First reported: 1996-09-19

Last reported: 1996-09-19

New Hampshire Natural Heritage Bureau - System Record

Sparsely vegetated intertidal system

Legal Status

Federal: Not listed
 State: Not listed

Conservation Status

Global: Not ranked (need more information)
 State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank:

Detailed Description: Extensive *intertidal flats* that are exposed daily at low tide, bordered in places by *intertidal rocky shore* and *coastal shoreline strand/swale* communities.

General Area: 2010: Borders salt marsh system landward and subtidal system seaward.

General Comments:

Management

Comments:

Location

Survey Site Name: Great Bay
 Managed By: Moody Point Open Space

County: Rockingham

Town(s): Newington

Size: 3589.5 acres

Elevation:

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

Directions: Occurs throughout Great Bay from the mouths of its tributaries, through Little Bay, to the confluence with the Piscataqua River.

Dates documented

First reported: 1997-06-23

Last reported: 2010-10-13

New Hampshire Natural Heritage Bureau - System Record

Subtidal system

Legal Status

Federal: Not listed
 State: Not listed

Conservation Status

Global: Not ranked (need more information)
 State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank:

Detailed Description: Channels and bay bottoms that vary in width from a few feet to almost a mile across, covered by water even at low tide. Patches of subtidal *eelgrass bed* occur at the edge of the adjacent sparsely vegetated intertidal system.

General Area: 2010: Borders a sparsely vegetated intertidal system.

General Comments:
 Management
 Comments:

Location

Survey Site Name: Great Bay
 Managed By: Portsmouth Country Club

County: Rockingham
 Town(s): Newington
 Size: 3207.7 acres

Elevation:

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

Directions: Occurs throughout the Great Bay estuary, from the upper tidal reaches of tributary streams to the confluence of the bay with the Piscataqua River.

Dates documented

First reported: 1997-06-17

Last reported: 2010-10-13

New Hampshire Natural Heritage Bureau - Plant Record

crested sedge (*Carex cristatella*)

Legal Status

Federal: Not listed
 State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
 Comments on Rank:

Detailed Description: 1950: Specimen collected.

General Area: 1950: Alder thicket.

General Comments:

Management

Comments:

Location

Survey Site Name: Bunker Creek

Managed By:

County: Strafford

Town(s): Durham ..

Size: 2.8 acres

Elevation: 20 feet

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

Directions: Durham. Head of Bunker Creek.

Dates documented

First reported: 1950-07-12

Last reported: 1950-07-12

New Hampshire Natural Heritage Bureau - Animal Record
New England Cottontail (*Sylvilagus transitionalis*)

<u>Legal Status</u>	<u>Conservation Status</u>
Federal: Not listed	Global: Rare or uncommon
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: 2008: This is the only verified observation of this species since the early 1990's. Surrounding habitat is marginal.

Detailed Description: 2008: 1 roadkilled cottontail collected.
General Area: 2008: Near historically occupied habitat.
General Comments: 2008: Species identification based on morphometrics and DNA analysis by Dr. John Litvaitis (UNH).

Management Comments:

Location

Survey Site Name: Route 4 Durham
Managed By:

County: Strafford
Town(s): Durham
Size: .1 acres **Elevation:**

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

Directions: 2008: On Rte. 4, ca. 0.5 km east from intersection with Rte. 108.

Dates documented

First reported: 2008-04-27	Last reported: 2008-04-27
-----------------------------------	----------------------------------

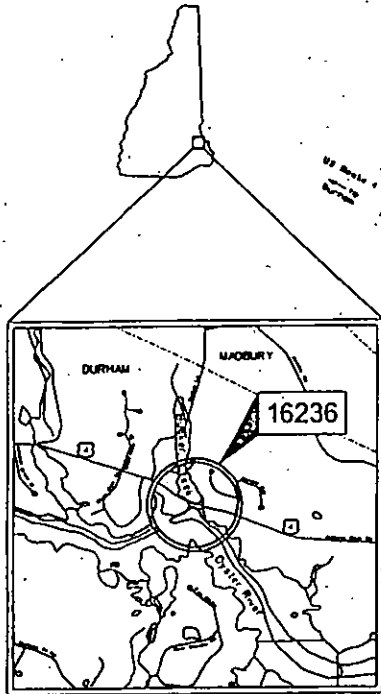
The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

**WETLAND PLANS
FEDERAL AID
BRIDGE REPLACEMENT PROJECT**

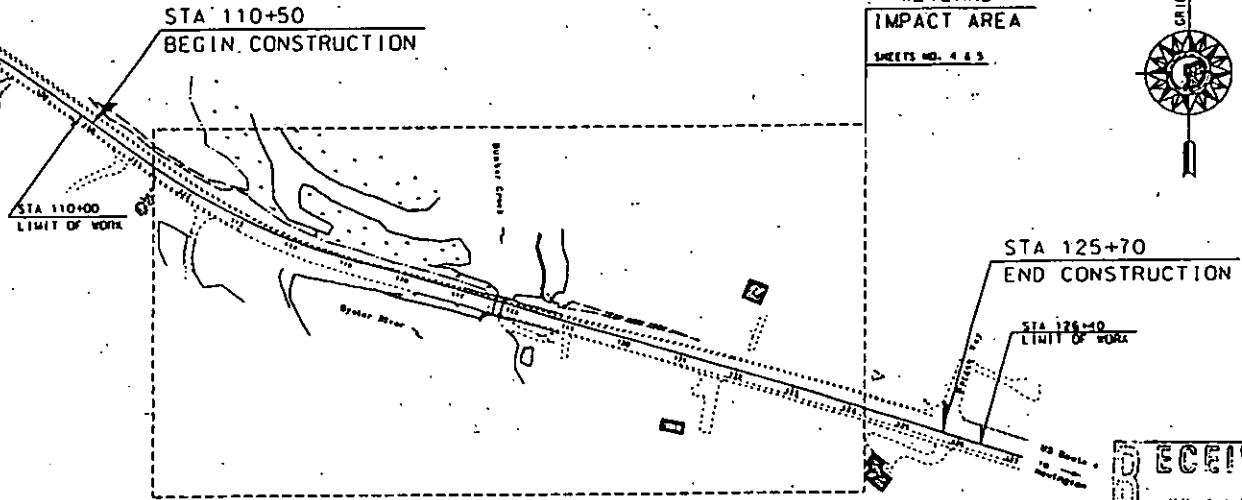
X-A001(202)
N.H. PROJECT NO. 16236
US ROUTE 4 OVER BUNKER CREEK
BRIDGE NO. 145/116

DESIGN DATA	
AVERAGE DAILY TRAFFIC 20	-
AVERAGE DAILY TRAFFIC 20	-
PERCENT OF TRUCKS	15.0%
DESIGN SPEED	55 MPH
LENGTH OF PROJECT	1149.71

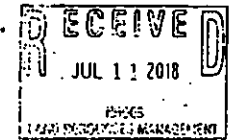
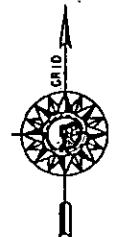


LOCATION MAP

GRAPHIC SCALE



WETLAND
IMPACT AREA
SHEETS NO. 4 & 5



INDEX OF SHEETS

- 1 FRONT SHEET
- 2-3 STANDARD SYMBOLS SHEETS
- 4-5 WETLAND IMPACT PLANS
- 6-7 EROSION CONTROL PLANS

TOWN OF DURHAM
COUNTY OF STRAFFORD

SCALE: 1" = 100'

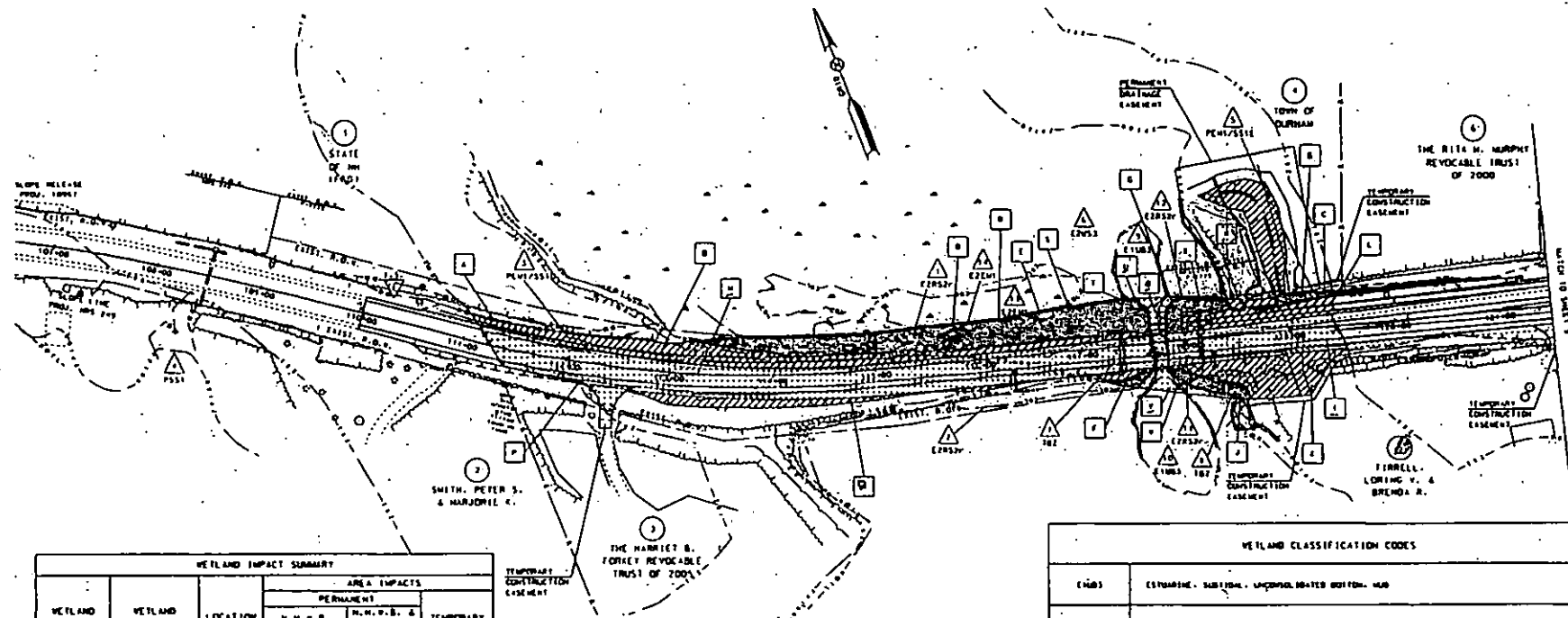
FOR CONSTRUCTION AND ALIGNMENT DETAILS - SEE CONSTRUCTION PLANS



NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION	
RECOMMENDED FOR APPROVAL:	
_____ SUPERVISOR OF PROJECT DESIGN GROUP	DATE
_____ ADMINISTRATOR, BUREAU OF FEDERAL AFFAIRS	DATE
APPROVED:	
_____ DISTRICT ENGINEER AND DISTRICT SUPERVISOR	DATE

REVISIONS OF THE PROPOSED REGULATION

NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			



WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA A IMPACTS				TEMPORARY	
			PERMANENT		TEMPORARY		SF	LF
			H.M.W.B. (NON-WETLAND)	A.C.D.E. (WETLAND)	SF	LF		
1	P2M2/S2	A						
2	P2M2/S2	B			242			
3	P2M2/S2	C	43	1274				
4	E2B2	D					1464	
5	E2B1	E			3130			
6	E2B2F	F			201			
7	E2B2S	G			184			
8	E2B2	H	3965					
9	E2B2	I					3219	
10	E2B2	J			832			
11	E2B2	K	4182					
12	E2B2	L	2754					
13	E2B2	M					20142	
14	E2B2	N	22350					
15	E2B2	O	1347					
16	E2B2	P	34					
17	E2B2F	Q			2577			
18	E2B1	R			815			
19	E2B2S	S			2083			
20	E2B2S	T			78		172	
21	E2B2S	U					325	
22	E2B2F	V			171			
23	E2B2F	W			321			

PERMANENT IMPACTS: 34170 SF
 TEMPORARY IMPACTS: 27362 SF
 TOTAL IMPACTS: 61532 SF

TEMPORARY CONSTRUCTION EASEMENT



LEGEND

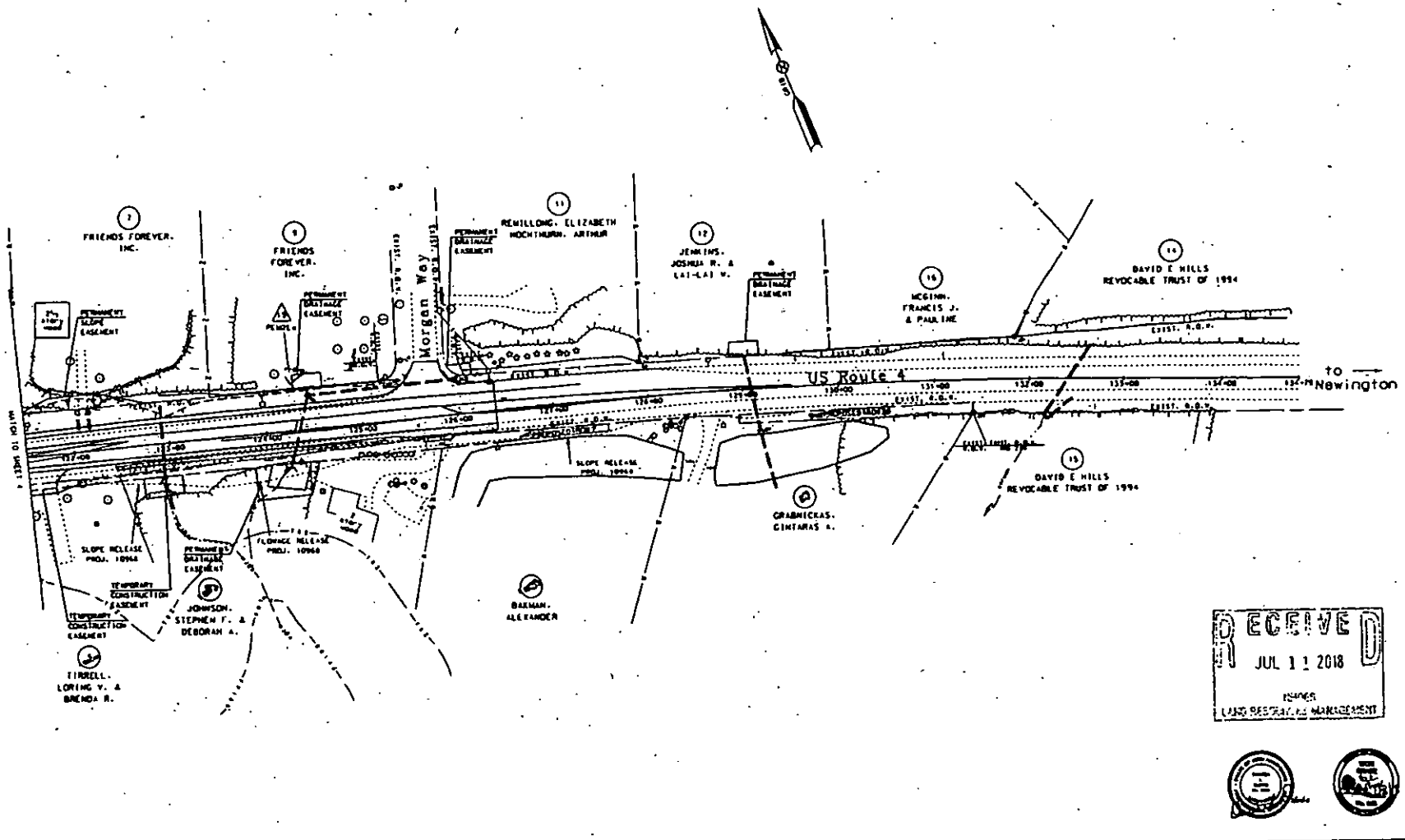
TYPE OF WETLAND IMPACT	SHADING/PATTERNING	WETLAND DESEIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	[Hatched Pattern]	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	[Cross-hatched Pattern]	WETLAND MITIGATION AREA
TEMPORARY IMPACTS	[Grid Pattern]	MITIGATION

WETLAND CLASSIFICATION CODES	
E2B2	ESTUARINE, SUBTIDAL, UNCONSOLIDATED SOFT-BOTTOM, MUD
E2B1	ESTUARINE, INTERTIDAL, PERSISTENT EMERGENT VEGETATION
E2B2F	ESTUARINE, INTERTIDAL, ROCKY SHORE, RUBBLE, ARTIFICIAL
E2B2S	ESTUARINE, INTERTIDAL, UNCONSOLIDATED SHORE, MUD
P2M2/S2	PALUSTRINE, PERSISTENT EMERGENT AND BROAD LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
P2M2	PALUSTRINE, EMERGENT, NON-PERSISTENT VEGETATION, SEASONALLY FLOODED/SATURATED, SWEETWATER



STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION & BUREAU OF HIGHWAY DESIGN
WETLAND IMPACT PLANS
 SHEET NO. [] OF [] TOTAL SHEETS

REVISIONS OF THE PROFESSIONAL DESCRIPTION			
NO.	DATE	BY	DESCRIPTION



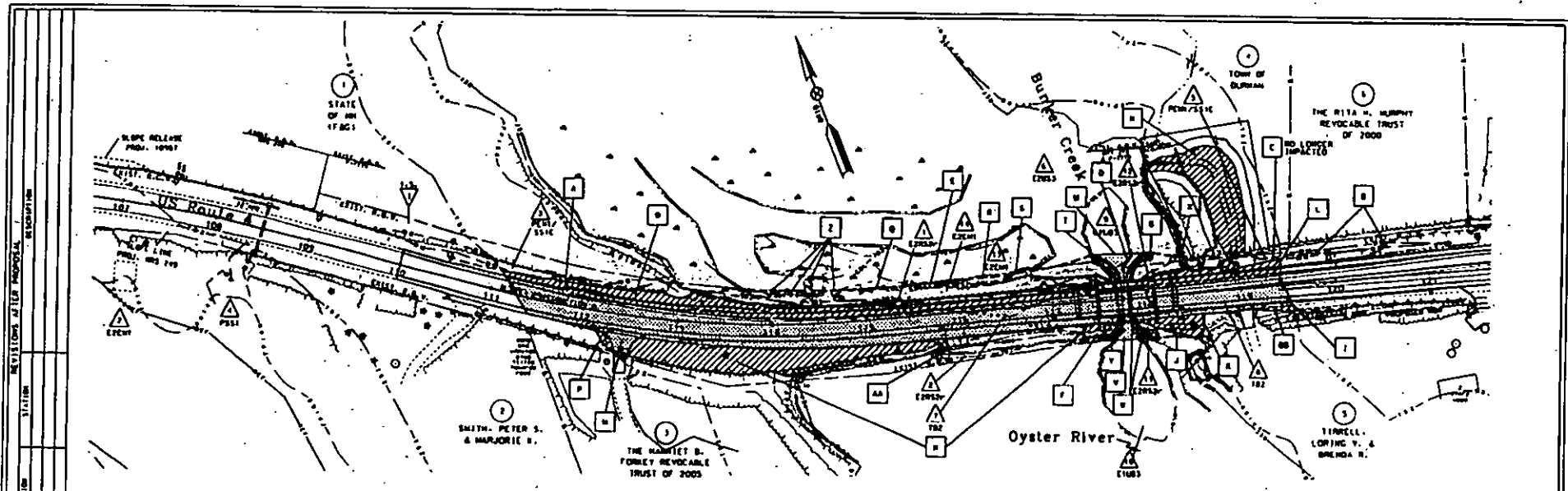
RECEIVED
 JUL 11 2018
 NHDES
 LAND RESTORATION MANAGEMENT



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

WETLAND IMPACT PLANS





DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: _____
 PROJECT NO.: _____
 SHEET NO.: _____
 TOTAL SHEETS: _____

WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						CHANGE FROM WETLAND IMPACT PLAN SUBMITTED APRIL 2010				
			PERMANENT		TEMPORARY		PERMANENT		TEMPORARY		PERMANENT	TEMPORARY	
			R.H.V.B. (NON-WETLAND)	N.H.V.B. & A.C.B.E. (WETLAND)	SF	LF	SF	LF	SF	LF			
3	PEM/PSIE	A		2									
5	PEM/PSIE	B		250						-250			
6	PEM	C	0							-63			
8	PEM/PSI	D			500						-500		
10	PEM/PSI	E		3100									
2	PEM/PSI	F		200						-200			
4	PEM/PSI	G		912							-912		
0	PEM	H	3100										
0	PEM	I			5370								
6	PEM/PSI	J		313									100
0	PEM	K	1017								-1017		
0	PEM	L	2350								-2350		
7	PEM	M			20451								63
7	PEM	N	2210								-2210		
7	PEM	O	2200								-2200		
7	PEM	P	103								-103		
1	PEM/PSI	Q		3640									110
13	PEM/PSI	R		270							-270		
6	PEM/PSI	S		2403							-2403		
6	PEM/PSI	T		161							-161		
9	PEM/PSI	U				291							110
10	PEM/PSI	V				106							-120
11	PEM/PSI	W		172									1
12	PEM/PSI	X		627									10
10	PEM/PSI	Y		200									200
6	PEM/PSI	Z		273									233
3	PEM/PSI	AA		170									170
0	PEM	BB	102										100
Subtotal			23311	12549	17000					1770			-617

PERMANENT IMPACTS: 35000 SF
 TEMPORARY IMPACTS: 27285 SF
 TOTAL IMPACTS: 62285 SF
 PERMANENT CHANGE: -1770 SF
 TEMPORARY CHANGE: -207 SF
 TOTAL CHANGE: -1977 SF

WETLAND CLASSIFICATION CODES		CHANGE FROM WETLAND IMPACT PLAN SUBMITTED APRIL 2010	
		PERMANENT (SF)	TEMPORARY (SF)
EWS2	ESTUARINE, INTERTIDAL, UNDEVELOPED OPEN/SHALLOWS	276	-60
E2OH	ESTUARINE, INTERTIDAL, PERSISTENT EMERGENT VEGETATION	-307	0
E2OHF	ESTUARINE, INTERTIDAL, ROCKY SHORE, MODERATE VEGETATION	273	0
EWS3	ESTUARINE, INTERTIDAL, UNDEVELOPED SHORE, HAD	-700	-100
PEM/PSIE	PHLEGETHIC, PERSISTENT EMERGENT AND BRUSH LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED	-615	0
PEM/PSI	PHLEGETHIC, EMERGENT, NON-PERSISTENT VEGETATION, SEASONALLY FLOODED/SATURATED, EXCAVATED	0	0
TOTAL WETLAND IMPACTS		-1130	-600
PEM	PERMANENT BUFFER ZONE	2022	300
TOTAL IMPACTS		892	-297

LEGEND

TYPE OF WETLAND IMPACT	SHADING/NOTING	▲	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU PERMANENT WETLAND	[Diagonal Hatching]	#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS PERMANENT WETLAND	[Stippled]	◆	WETLAND MITIGATION AREA
TEMPORARY IMPACTS	[Dotted]	□	MITIGATION

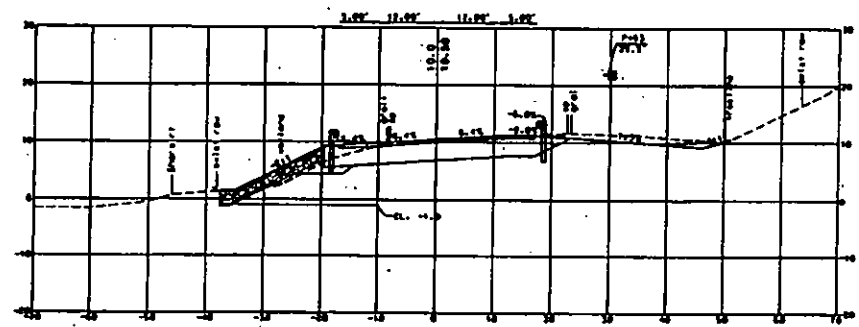


NOTE:
 WETLAND DESIGNATIONS AND WETLAND CLASSIFICATIONS
 PREPARED BY WETLANDS ASSOCIATES AND DRG ASSOCIATES, INC.

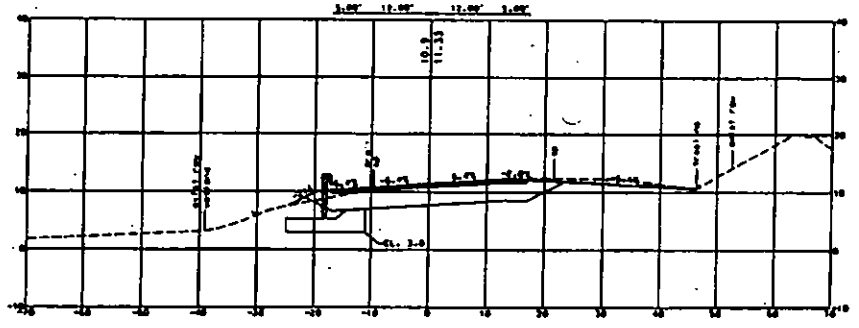
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION - BUREAU OF BRIDGE DESIGN
WETLAND IMPACT PLAN
 PROJECT NO. 16234-0101001 DATE PROJECT NO. 16234 SHEET NO. 15 TOTAL SHEETS 16



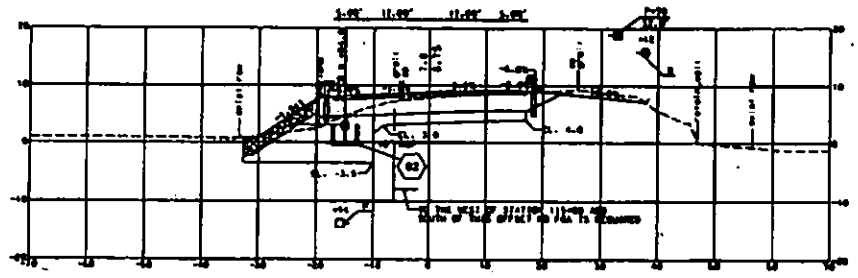
DATE	BY	SECTION	DESCRIPTION
11-1-55	C. W. BILKINS	113+00	113+00
11-1-55	C. W. BILKINS	114+00	114+00
11-1-55	C. W. BILKINS	113+50	113+50
11-1-55	C. W. BILKINS	114+50	114+50



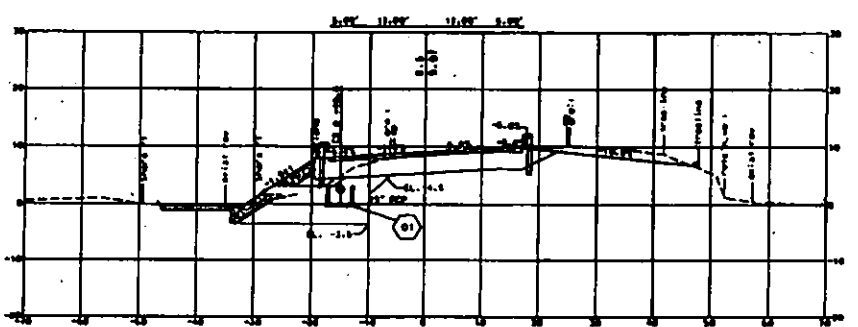
113+50



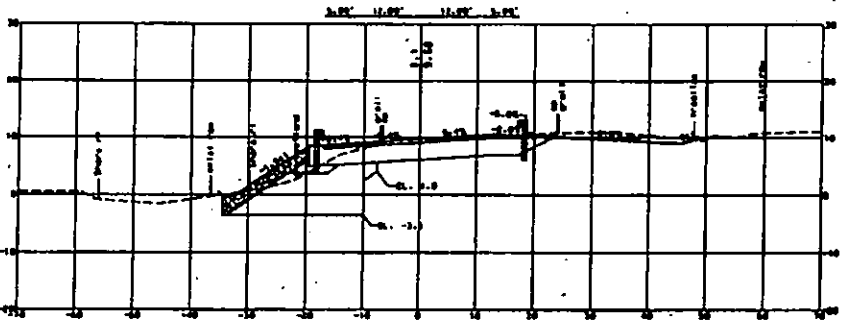
113+00



115+00



114+50



114+00

DATE		BY	
11-1-55	C. W. BILKINS	11-1-55	C. W. BILKINS
PROJECT NO.		SHEET NO.	
11374-00		17	
TOTAL SHEETS		18	

US ROUTE 4
CROSS SECTION

STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

DATE: November 24, 1019
Rev. April 13, 2020

FROM: Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of
Transportation

SUBJECT: Dredge & Fill Application
Durham, 16236
NHDES File 2018-02051

Bureau of Environment

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

RE: Request for Permit Amendment
Route 4 Over Bunker Creek Bridge Replacement, Durham, NH
Wetlands and Non-Specific Permit # 2018-02051

Dear Mr. Price,

On behalf of the New Hampshire Department of Transportation, an amendment to the above-referenced permit is requested to authorize minor changes to temporary and permanent impacts to wetland resource areas and associated Tidal Buffer Zone (TBZ). These proposed impact area changes are the result of design modifications as required to progress the site plans from the April 2018 version (upon which the original wetland permit review was based) to the Final Construction Plans dated (11/8/19).

The proposed changes to impacts within wetland resource areas and Tidal Buffer Zone are shown on the attached Wetland Impact Plan (Sheet #11), which includes the certifications and stamps required by the permit. The Wetland Impact Plan includes a section that specifies "Change from Wetland Impact Plan Submitted April 2018". Changes within each category of wetland are summarized as follows:

Wetland Classification	Wetland Code	Change from Wetland Impact Plan Submitted April 2018	
		Permanent (s.f.)	Temporary (s.f.)
Estuarine, Subtidal, Unconsolidated Bottom, Mud	E1UB3	276	-20
Estuarine, Intertidal, Persistent Emergent Vegetation	E2EM1	-357	0
Estuarine, Intertidal, Rocky shore, Rubble Artificial	E2RS2r	223	0
Estuarine, Intertidal, Unconsolidated Shore, Mud	E2US3	-778	-526
Palustrine, Persistent Emergent and Broad Leaved Deciduous, Seasonally Flooded/Saturated	PEM1/SS1E	-516	0
Palustrine, Emergent, Non-Persistent Vegetation, Seasonally Flooded/Saturated, Excavated	PEM2Ex	0	0
Wetland Area Totals		1,152	-546
Tidal Buffer Zone	TBZ	2,922	249

Please note the submission includes the following, which addresses the conditions noted in Approval 2018-02051:

1. Plans by NHDOT Bureau of Highway Design dated April 2018 which were submitted with the permit applications have been updated. Enclosed, to satisfy Condition 2 of the Permit, are design plans with revisions dated 11/8/2019. These plans reflect the final Release for Construction Plans.
2. Please note that revised wetland impacts are shown on sheet 11 of 16, with summary table.
3. Stone slopes protecting the abutments are shown on plan sheets 5 through 7 and are 1.5:1 as required by Condition 3 of the Permit.
4. Stone slopes protecting the road embankment fills into estuarine wetlands are shown on plan sheets 12 through 14 and are 2:1 or steeper as required by Condition 4 of the Permit.
5. Details for the rip rap per rule Env-Wt 404.04 are included in the enclosed plans stamped by a PE on sheets 6, 7, 12-14 as required by Condition 5 of the Permit.
6. The enclosed plan set includes on the title sheet, a stamped plan as required by Condition 6 of the Permit.
7. Plan sheets 5 and 6 of the enclosed set shows plans and details for establishing the natural substrate channel as required by Condition 7 of the Permit.
8. Plan sheets 15 and 16 of the enclosed plan set show erosion control plans as required by Condition 8 of the Permit.
9. The pre-construction meeting was held August 28, 2019.
10. A turbidity monitoring plan / mixing zone plan, *revised April 13, 2020*

A copy of this Permit Amendment application and plans can be accessed on the Departments website via the following link: <http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>

The lead people to contact for this project are Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or Andrew.O'sullivan@dot.nh.gov).

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

AMO:amo
Enclosures

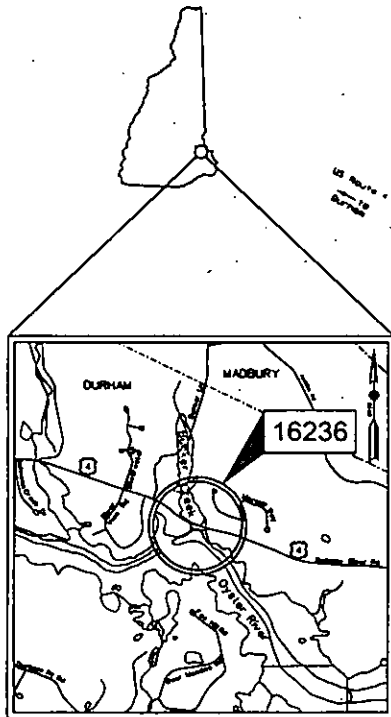
cc:
BOE Original
Town of Durham (4 copies via certified mail)
David Trubey, NH Division of Historic Resources (Cultural Review Within)
Bureau of Construction, Nickle Hunter
Carol Henderson, NH Fish & Game (via electronic notification)
Maria Tur, US Fish & Wildlife (via electronic notification)
Mark Kern, US Environmental Protection Agency (via electronic notification)
Michael Hicks, US Army Corp of Engineers (via electronic notification)
Kevin Nyhan, BOE (via electronic notification)

S:\Environment\PROJECTS\DURHAM\16236\Wetlands\WETAPP permit amendment 04132020

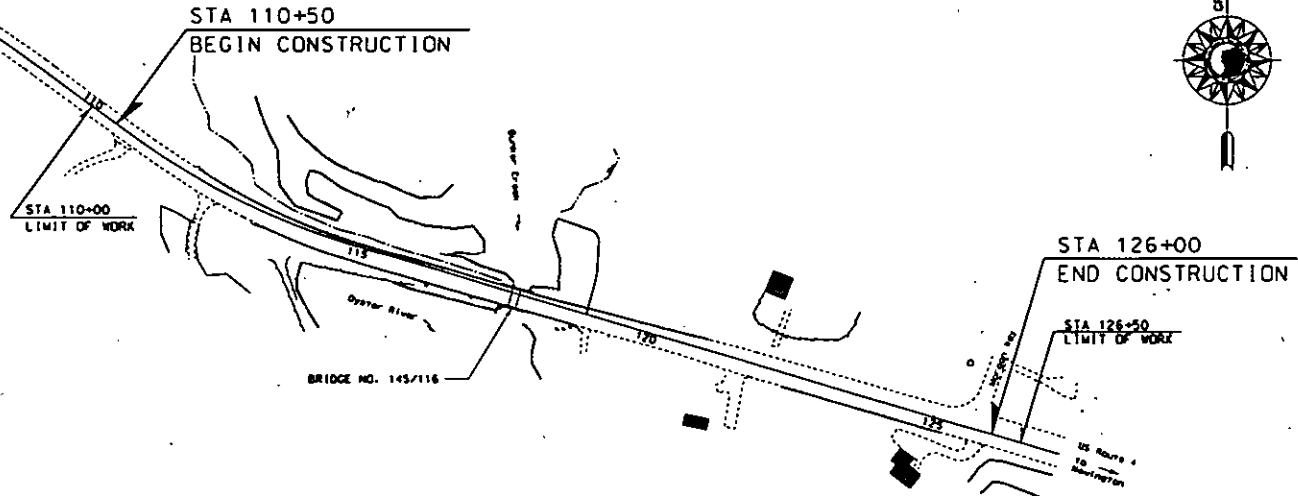
STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PLANS
FEDERAL AID
BRIDGE REPLACEMENT PROJECT

FEDERAL PROJECT NO. X-A001(202)
 N.H. PROJECT NO. 16236
 US ROUTE 4 OVER BUNKER CREEK
 BRIDGE NO. 145/116

DESIGN DATA	
AVERAGE DAILY TRAFFIC 2015	17,400
AVERAGE DAILY TRAFFIC 2031	21,700
PERCENT OF TRUCKS	4%
DESIGN SPEED	45 MPH
LENGTH OF PROJECT	1,050 FT
FUNCTIONAL CLASSIFICATION	URBAN ARTERIAL



LOCATION MAP



**WETLAND IMPACT
 PLAN SUBMISSION**
 11/8/2019

TOWN OF DURHAM
 COUNTY OF STRAFFORD
 SCALE: 1" = 100'



			THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
FEDERAL PROJECT NO. X-A001(202)	STATE PROJECT NO. 16236	SHEET NO. 1	TOTAL SHEETS 16

DRAWN BY: S. STREIBER
 CHECKED BY: S. STREIBER
 DATE: 11-08-2019