



The State of New Hampshire  
**Department of Environmental  
Services**



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Robert R. Scott, Commissioner

JAN 10 '19 PM 1:49 DAS

January 6, 2019

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

**REQUESTED ACTION**

Approve NH Dept. of Transportation's request to perform the following work on Bunker Creek in Durham. File # 2018-02051. This project will not have significant impact on or adversely affect the values of Bunker Creek.

Replace a 15 ft. span bridge and 30 ft. wide roadway with a 73 ft. span bridge and 34 ft. wide roadway impacting 61,682 sq. ft. of tidal buffer zone, estuarine and palustrine wetlands (27,652 sq. ft. temporary) Compensatory mitigation includes a one-time payment of \$208,862.54 to the Aquatic Resource Mitigation Fund. NHDOT project #16236.

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

1. All work shall be in accordance with plans by NHDOT Bureau of Highway Design dated April 2018 as received by the Department on July 11, 2018.
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.

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

29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095  
NHDES Main Line: (603) 271-3503 • Subsurface Fax: (603) 271-6683 • Wetlands Fax: (603) 271-6588  
TDD Access: Relay NH 1 (800) 735-2964

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 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; 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 in place 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 to be taken within riparian areas to limit unnecessary removal of vegetation and areas cleared of vegetation to 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 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 February 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 on receipt by NHDES of a one-time payment of \$208,862.54 to the NHDES Aquatic Resource Mitigation (ARM) Fund.

#### EXPLANATION

The NHDES approved this project on December 07, 2018. The NHDES supported its decision with the following findings:

1. This is a major impact project per Administrative Rule Env-Wt 303.02(a), projects in tidal wetlands.
2. The department 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 department'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 NH Dept. of Transportation (NHDOT) on November 20, 2013, February 18, 2015 and September 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 ft. to a minimum width of 28 ft. allowing for additional tidal flushing.
8. As the application states the project is a design- build, 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 plan surveys have been completed and none were found.
10. NH Fish and Game Dept. 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 noted a concern that Atlantic Sturgeon may be present so the design will include turbidity curtains excluding them from the area. The application, plans and permit conditions address the comments presented.
12. In accordance with RSA 482-A:8, 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:

13. The applicant has reviewed on-site options for mitigation and the department has determined that this project is acceptable for payment to the Aquatic Resource Mitigation (ARM) Fund.
14. Mitigation compensation is for impacts to 12,085 sq. ft. of estuarine wetlands, 1,616 sq. ft. of palustrine wetlands and 20,419 sq. ft. of tidal buffer zone.

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15. The payment calculated for the proposed wetland loss equals \$208,862.54.
16. The Department decision is issued in letter form and upon receipt of the ARM fund payment, the Department 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 submit this request for your consideration.

  
\_\_\_\_\_  
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](http://www.des.nh.gov/onestop)

Project No: SA-102-W-E-W-100-900

**RECEIVED** JUN 14 2018

**COMPLETE** JUN 14 2018

2018-02651  
V-53553-1  
10,000  
SW

**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 REQUIREMENT:**

If mitigation is required a Mitigation Pre-Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: 9 Day: 20 Year: 2017  
 N/A - Mitigation is not required

**3. PROJECT LOCATION:**

Separate wetland 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 outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. **DO NOT** reply "See Attached" in the space provided below.

The New Hampshire Department of Transportation (NHDOT) 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/Required Attachments document for instructions to complete a/b 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

**8. APPLICANT INFORMATION (Different than milk holder)**

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:

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

**9. PROPERTY OWNER INFORMATION (If different than applicant)**

LAST NAME, FIRST NAME, M.I.: **NHDOT OR TRANS**

TRUST / COMPANY NAME: MAILING ADDRESS:

TOWN/CITY: STATE: ZIP CODE:

EMAIL or FAX: PHONE:

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

**11. PROPERTY OWNER SIGNATURE**  
See the Instructions & Required Attachments document for clarification of the below statements.

By signing the application, I am certifying that:

- 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.
- I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
- All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
- 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.
- I have submitted a Request for Project Review (RPR) Form ([www.nh.gov/nhdhr/review](http://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.
- I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
- I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 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.
- I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
- The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

 **L. Robert Landry** **7/5/2018**  
Property Owner Signature Print name legibly Date

**MUNICIPAL SIGNATURES**

**12. 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.

<input type="text"/>	<input type="text"/>	<input type="text"/>
Town/City Clerk Signature	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.

**13. 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.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Town/City Clerk Signature	Print name legibly	Town/City	Date

**DIRECTIONS FOR TOWN/CITY CLERK**

Per RSA 482-A:3:

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.

**14. IMPACT AREA**  
 For each jurisdictional area that will be/has been impacted, provide square feet and (if applicable) linear feet of impact.  
 Permanent impacts that will remain after the project is complete.  
 Temporary impacts (not intended to remain and will be restored to pre-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	32,025 <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
<b>TOTAL</b>	<b>34,120 / 665</b>	<b>27,562 / 75</b>

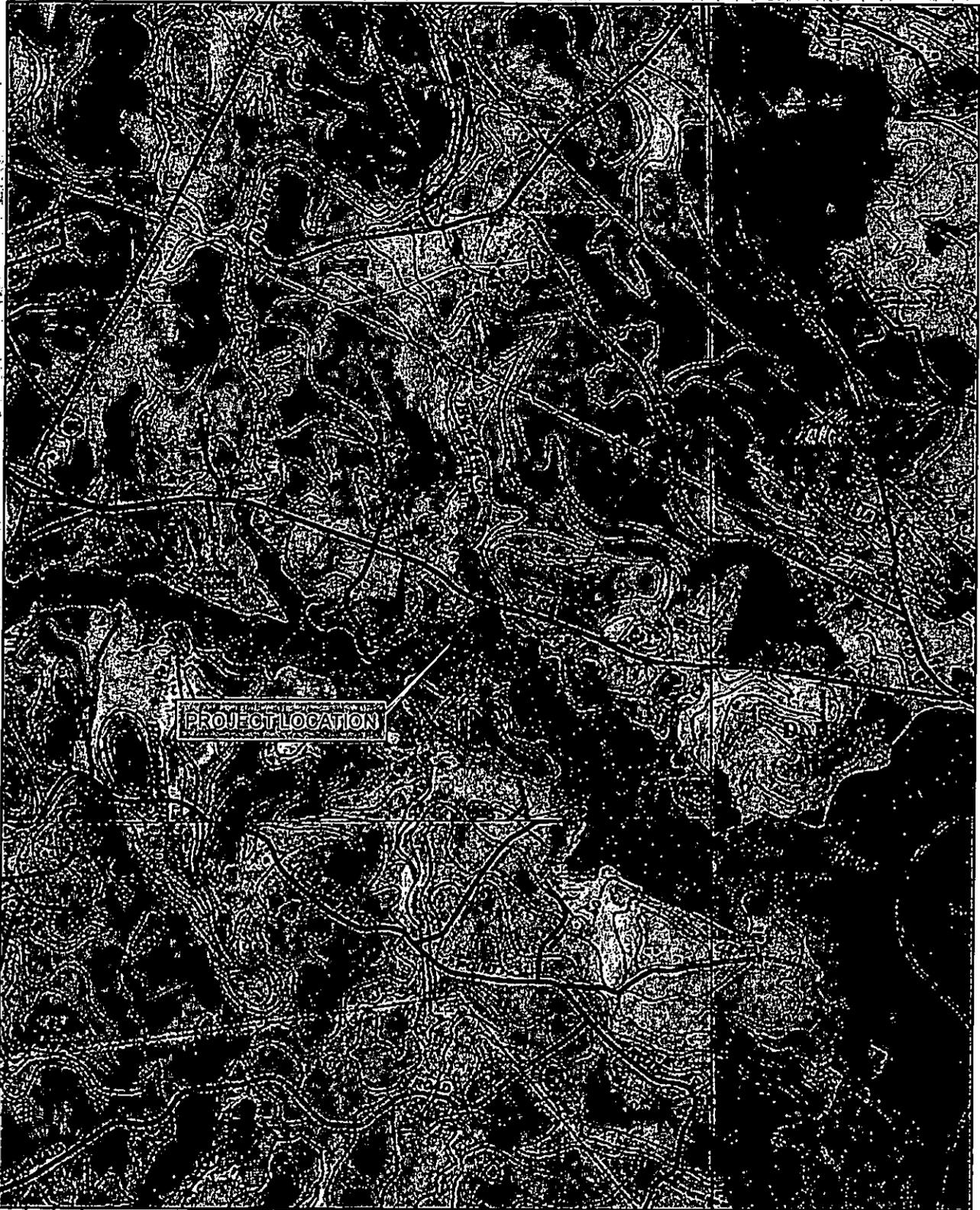
**15. APPLICATION FEE** See the Instructions & Required Attachments document for further instruction

Minimum Impact Fee: Flat fee of \$ 200

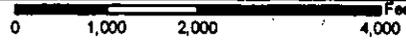
Minor or Major Impact Fee: Calculate using the below table below

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



Date: 1/22/2017  
 Drawn By: volkmer  
 Project No: 23184.001

NHDOT  
 DURHAM, NEW HAMPSHIRE  
 16236

**EXHIBIT A - PROJECT LOCATION**

SCALE: 1:24,000

**NORMANDEAU ASSOCIATES**  
 Environmental Consultants  
 25 Nashua Road Bedford NH 03110  
 (603) 477-5191 www.normandeau.com

APRIL 2018

# Exhibit D

## Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

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

Town: Durham

Location: US Route 4

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

cc: Kim Tuttle

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

**Comments:** Update to NHB 17-2706. Note that some rare plant records have been identified that are located within the project area. Rare plant surveys have been completed and some were found within 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**

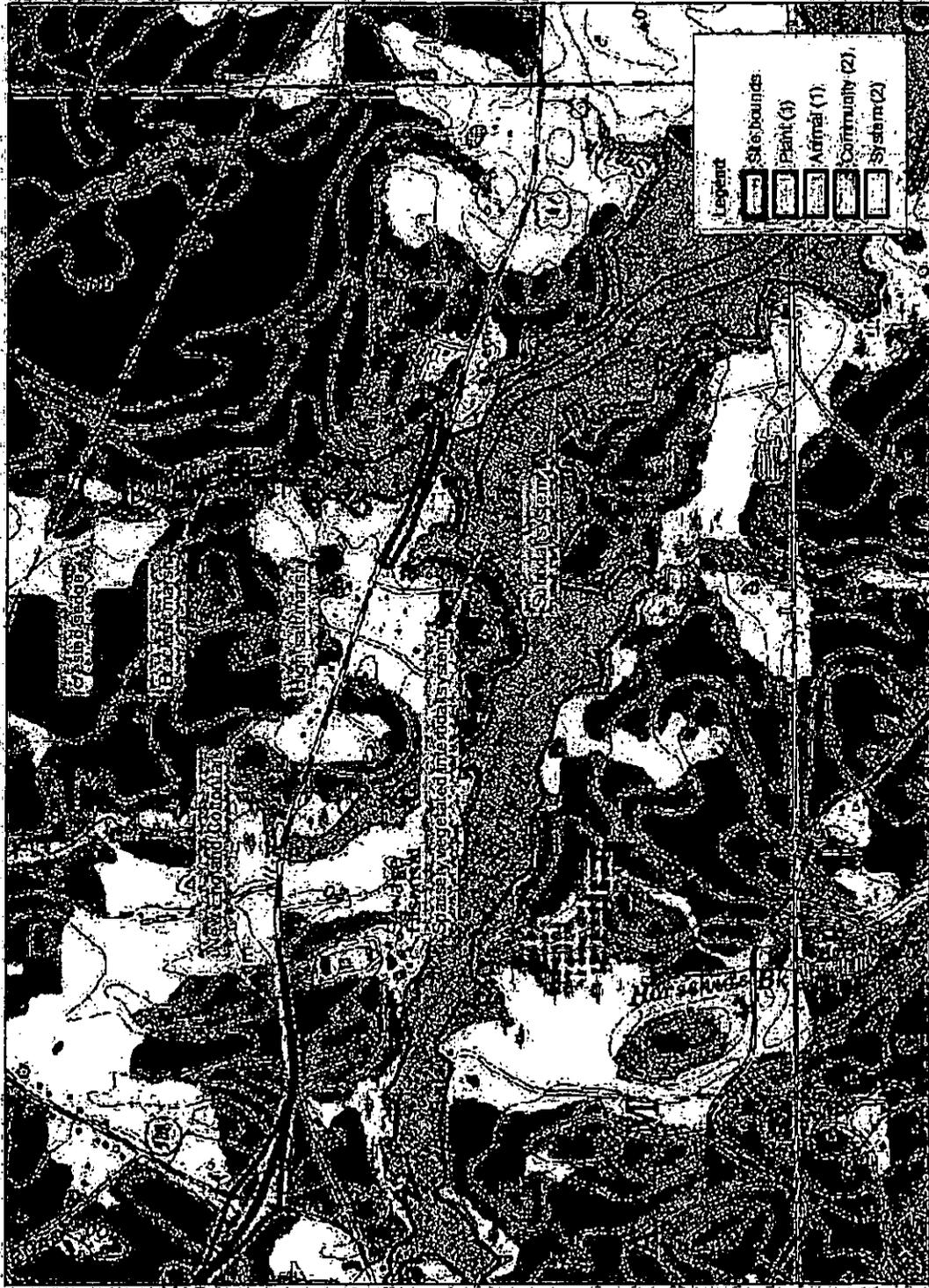
	State <sup>1</sup>	Federal	Notes
New England Cottontail ( <i>Sylvilagus transitionalis</i> )	E	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community or 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.

NHB17-2706





## 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 total 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 - Animal Record

### New England Cottontail (*Sylvilagus transitionalis*)

**Legal Status**

Federal: Not listed  
 State: Listed Endangered

**Conservation Status**

Global: Rare or uncommon  
 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

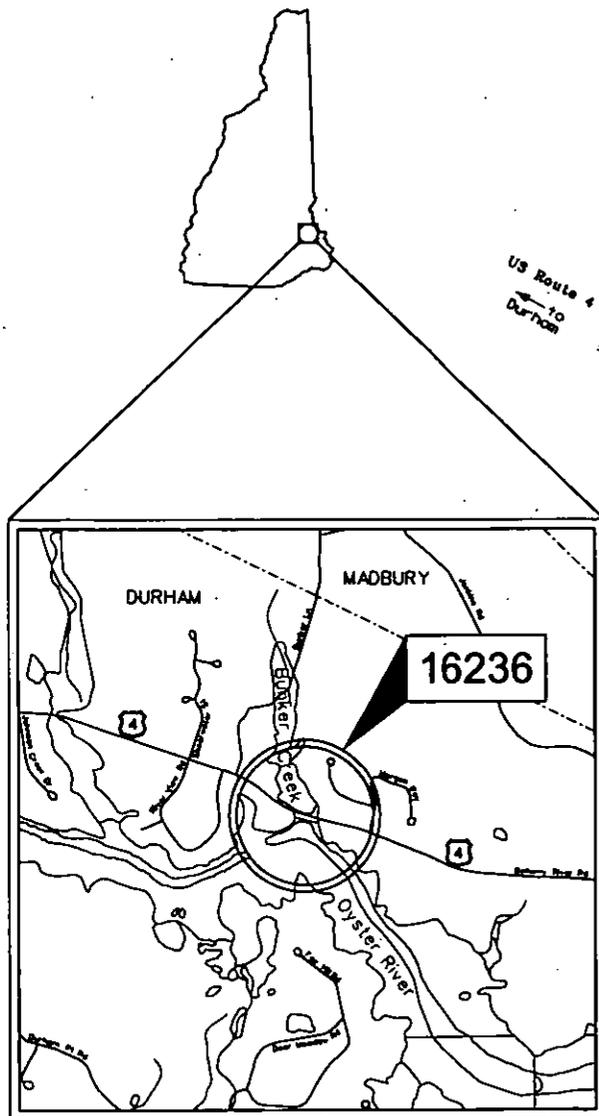
The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION

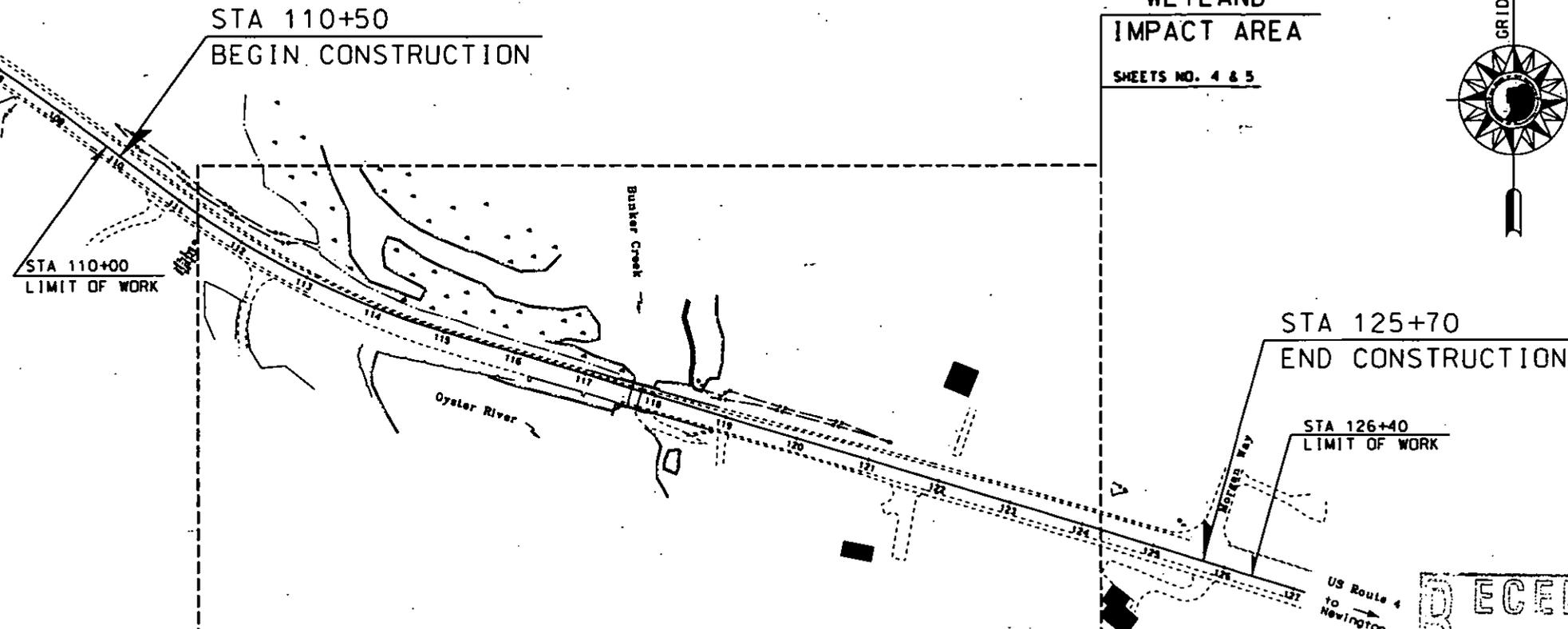
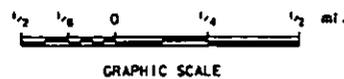
**WETLAND PLANS  
FEDERAL AID  
BRIDGE REPLACEMENT PROJECT**

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	-
DESIGN SPEED	45 MPH
LENGTH OF PROJECT	1640 FT



LOCATION MAP



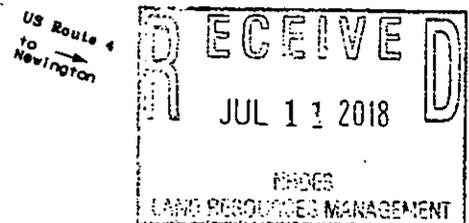
WETLAND  
IMPACT AREA

SHEETS NO. 4 & 5



STA 125+70  
END CONSTRUCTION

STA 126+40  
LIMIT OF WORK



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

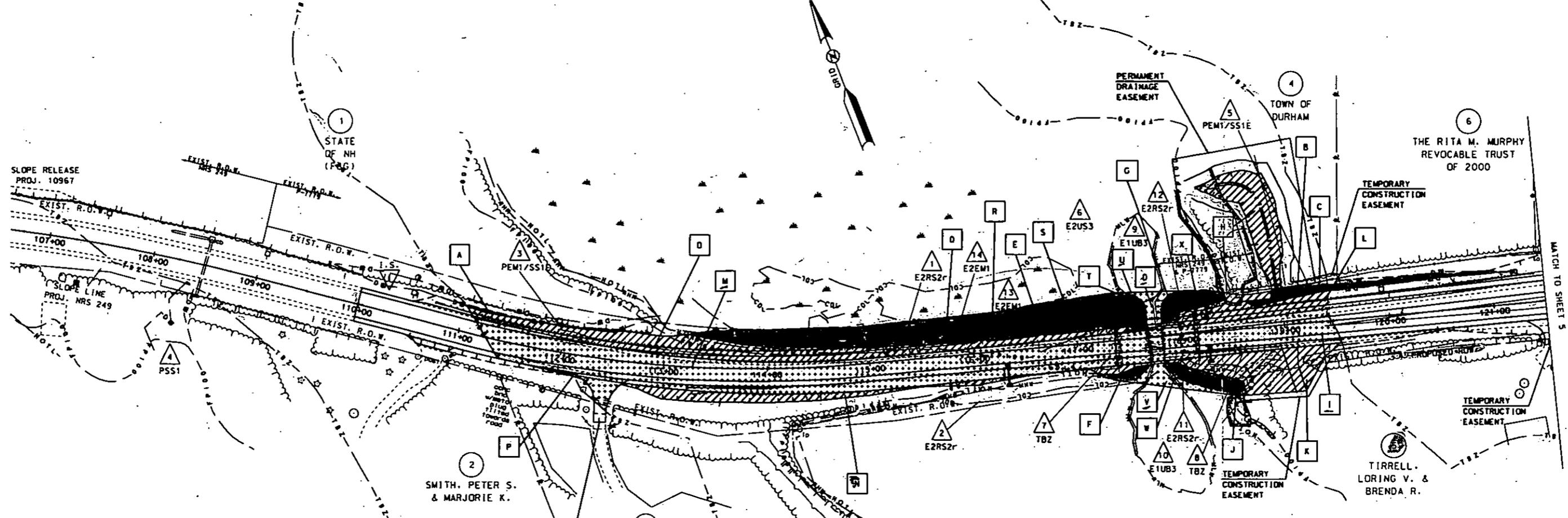
DATE 04/18  
DRAWN BY J. WENZEL  
BY M. CUMMINGS



GMP Associates, Inc.  
197 London Road, Suite 310  
Concord, NH 03301  
Tel: 603-856-7854

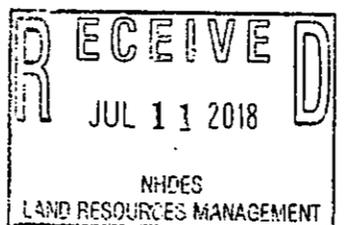
<b>NHDOT</b> THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION	
RECOMMENDED FOR APPROVAL:	
DIRECTOR OF PROJECT DEVELOPMENT	DATE
ADMINISTRATOR, BUREAU OF MUNICIPAL HIGHWAYS	DATE
APPROVED:	
ASSISTANT COMMISSIONER AND CHIEF ENGINEER	DATE
FEDERAL PROJECT NO.	STATE PROJECT NO.
SHEET NO.	TOTAL SHEETS

REVISIONS AFTER PROPOSAL  
 STATION  
 DATE  
 NUMBER  
 DESCRIPTION  
 DATE  
 NAME  
 DATE  
 NAME  
 DATE  
 NAME  
 DATE  
 AS BUILT DETAILS



WETLAND IMPACT SUMMARY							
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS				
			PERMANENT				TEMPORARY
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.D.E. (WETLAND)		
SF	LF	SF	LF	SF	LF		
3	PEM1/SS1E	A			242		
5	PEM1/SS1E	B			1374		
8	TBZ	C	.63				
6	E2US3	D					1484
14	E2EM1	E			3190		
2	E2RS2r	F			301		
6	E2US3	G			704		
8	TBZ	H	3885				
8	TBZ	I					5219
6	E2US3	J			892		
8	TBZ	K	4182				
7	TBZ	L	2258				
7	TBZ	M					20362
7	TBZ	N	2550				
7	TBZ	O	7347				
7	TBZ	P	34				
1	E2RS2r	Q			2632		
13	E2EM1	R			635		
6	E2US3	S			3085		
9	E1UB3	T			76		
9	E1UB3	U					172
10	E1UB3	V					325
11	E2RS2r	W			171		
12	E2RS2r	X			399		

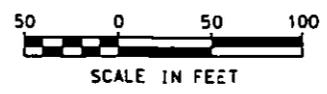
PERMANENT IMPACTS: 34120 SF  
 TEMPORARY IMPACTS: 27562 SF  
 TOTAL IMPACTS: 61682 SF



LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING	#	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	[Diagonal Hatching]	#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	[Solid Black]	#	WETLAND MITIGATION AREA
TEMPORARY IMPACTS	[Dotted]	[Diagonal Hatching]	MITIGATION

WETLAND CLASSIFICATION CODES	
E1UB3	ESTUARINE, SUBTIDAL, UNCONSOLIDATED BOTTOM, MUD
E2EM1	ESTUARINE, INTERTIDAL, PERSISTENT EMERGENT VEGETATION
E2RS2r	ESTUARINE, INTERTIDAL, ROCKY SHORE, RUBBLE, ARTIFICIAL
E2US3	ESTUARINE, INTERTIDAL, UNCONSOLIDATED SHORE, MUD
PEM1/SS1E	PALUSTRINE, PERSISTENT EMERGENT AND BROAD LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
PEN2E*	PALUSTRINE, EMERGENT, NON-PERSISTENT VEGETATION, SEASONALLY FLOODED/SATURATED, EXCAVATED



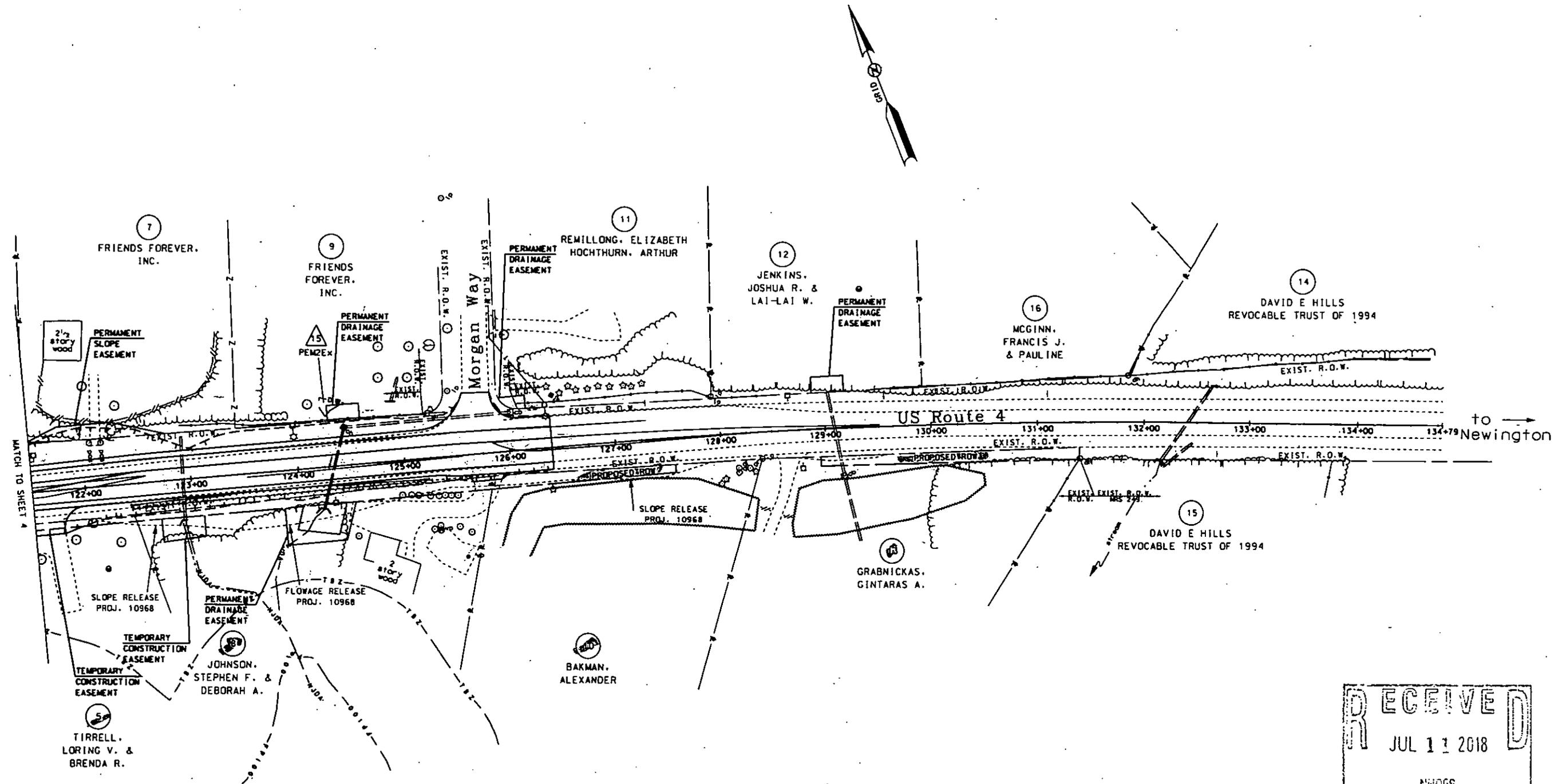
STATE OF NEW HAMPSHIRE  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN  
**WETLAND IMPACT PLANS**  
 DGN: [ ] STATE PROJECT NO.: [ ] SHEET NO.: [ ] TOTAL SHEETS: [ ]



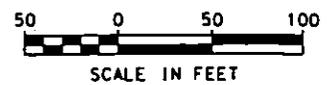
NO.	DATE	BY	DESCRIPTION
1			DESIGN
2			CHECKED
3			APPROVED

NO.	DATE	BY	DESCRIPTION
1			DESIGN
2			CHECKED
3			APPROVED



**RECEIVED**  
 JUL 11 2018  
 NHHS  
 LAND RESOURCE MANAGEMENT



STATE OF NEW HAMPSHIRE  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN  
**WETLAND IMPACT PLANS**