Appendix F-1

NHDES Wetland Permit Application, July 10, 2015

Revised December 23, 2015

■

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

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

RSA/Rule: Env-Wq 100-900

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

1. REVIEW TIME:
Indicate your Review Time below. Refer to Guidance Document A for instructions.

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

2. PROJECT LOCATION:
Separate applications must be filed with each municipality that jurisdictional impacts will occur in.

ADDRESS: **Existing Electric Transmission Right-of-Way (ROW)**			TOWN/CITY: **Londonderry**
TAX MAP: **N/A**	BLOCK: **N/A**	LOT: **N/A**	UNIT: **N/A**
USGS TOPO MAP WATERBODY NAME: ☒ NA		STREAM WATERSHED SIZE: ☒ NA	

LOCATION COORDINATES (If known): **Multiple locations along an existing electric transmission ROW in Londonderry**
☐ Latitude/Longitude ☐ UTM ☐ State Plane

3. 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 Merrimack Valley Reliability Project (MVRP) involves the construction of a new overhead 345 kV electric transmission line within an existing electric transmission ROW between the New England Power d/b/a National Grid (NEP) owned Tewksbury 22A Substation in Tewksbury, Massachusetts and the Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH) owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The portion of the MVRP located within New Hampshire that is the subject of this permit application is referred to herein as the "Project". The Project extends from the Massachusetts border in Pelham, New Hampshire to the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The Project proposes approximately 17.9 miles of new transmission line (which will be known as "3124 Line") within the towns of Pelham, Windham, Hudson, and Londonderry as well as relocation of 7.6 miles of an existing 115 kV NEP-owned transmission line (known as "Y-151 line") within the Towns of Pelham, Windham and Hudson.

The MVRP has been divided into four segments delineated by state, ownership, and line alignment. ***Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein.*** Segment 2 is the portion of the Project in New Hampshire to be owned and operated by NEP. Segment 2 runs from the Massachusetts/New Hampshire continuing north within an existing NEP ROW for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the town of Hudson where the project shifts from the existing NEP ROW to an existing PSNH ROW. Segments 3 and 4 account for the remaining 9.8 miles of the Project in the Towns of Hudson and Londonderry to be owned and operated by PSNH.

To incorporate the new 3124 Line in the majority of Segment 2, the existing NEP-owned Y-151 line (overhead 115 kV transmission line) will need to be relocated within the western edge of the existing NEP ROW and the new 3124 Line will be installed in the original Y-151 alignment. In Segment 3, the new 3124 Line will be installed within the eastern edge of the existing PSNH ROW. In Segment 4, the new 3124 Line will be installed within the center of the existing PSNH ROW. ***Refer to the Attached Application Narrative, Figures and Appendices for more information.***

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC...

1. NHSEC Joint Application for a Certificate of Site and Facility;
2. NHDES Shoreland Permit Application (being submitted concurrently with this application);
3. NHDES 401 Water Quality Certification **(**being submitted concurrently with this application);
4. NHDES Alteration of Terrain Permit Application (being submitted concurrently with this application);
5. NHDES Wetlands Permits for Geotechnical Boring Work Associated with the MVRP (**#2015-01230; #2015-01231**);
6. NHDES Shoreland Permit By Notification for Geotechnical Boring Work Associated with the MVRP (**#2015-01272**).

5. 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 **14**- **4809**.

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

6. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Nelson, Kurt**		
TRUST / COMPANY NAME: **Public Service of New Hampshire (PSNH)**	MAILING ADDRESS: **13 Legends Drive**	
TOWN/CITY: **Hooksett**	STATE: **NH**	ZIP CODE: **03106**
EMAIL or FAX: **kurt.nelson@eversource.com**	PHONE: **603-634-3256**	
ELECTRONIC COMMUNICATION: By initialing here: **KIN**, I hereby authorize DES to communicate all matters relative to this application electronically		

7. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **ROW consists of existing easements and fee ownerships**		
TRUST / COMPANY NAME:	MAILING ADDRESS:	
TOWN/CITY:	STATE:	ZIP CODE:
EMAIL or FAX:	PHONE:	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize DES to communicate all matters relative to this application electronically		

8. AUTHORIZED AGENT INFORMATION

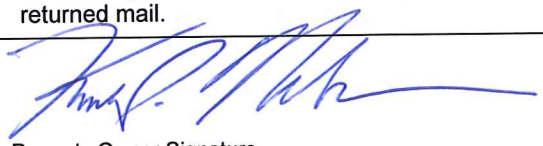
LAST NAME, FIRST NAME, M.I.: **Trefry, Sherrie L.**	COMPANY NAME: **Vanasse Hangen Brustlin, Inc.**	
MAILING ADDRESS: **2 Bedford Farms Drive, Suite 200**		
TOWN/CITY: **Bedford**	STATE: **NH**	ZIP CODE: **03110**
EMAIL or FAX: **strefry@vhb.com**	PHONE: **603-391-3900**	
ELECTRONIC COMMUNICATION: By initialing here **SLT**, I hereby authorize DES to communicate all matters relative to this application electronically		

9. PROPERTY OWNER SIGNATURE:

See the Instructions & 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 be reviewed for the presence of historical/ archeological resources.
8. I authorize DES 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 DES correspondence. DES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
	**Kurt I. Nelson**	12 / 07 / 2015

MUNICIPAL SIGNATURES

10. 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. The Conservation Commission signature should be obtained **prior** to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
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 reviewed in the standard review time frame.

11. 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,I

1. For applications where "Expedited Review" is checked on page 1, sign and accept the applications **only** if the Conservation Commission signature has been received;
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 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.

12. 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	13	☐ ATF	25,010	☐ ATF
Scrub-shrub wetland	132	☐ ATF	49,055	☐ ATF
Emergent wetland	158	☐ ATF	115,693	☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	/	☐ ATF	/	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	80 / 17 (Bed Impact)	☐ ATF	922 / 415 (Bed Impact)	☐ ATF
Bank - Perennial stream / River	/	☐ ATF	/	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
TOTAL	**383 / 17**		**190,680 / 415**	

13. 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)	**191,063** sq. ft.	X	$0.20 =	**$ 38,212.60**
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 =				**$ 38,212.60**
The Application Fee is the above calculated Total or $200, whichever is greater =				**$ 38,212.60**

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

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

RSA/Rule: Env-Wq 100-900

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

1. REVIEW TIME:
Indicate your Review Time below. Refer to Guidance Document A for instructions.

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

2. PROJECT LOCATION:
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ADDRESS: **Existing Electric Transmission Right-of-Way (ROW)**			TOWN/CITY: **Hudson**
TAX MAP: **N/A**	BLOCK: **N/A**	LOT: **N/A**	UNIT: **N/A**
USGS TOPO MAP WATERBODY NAME: ☒ NA		STREAM WATERSHED SIZE: ☒ NA	

LOCATION COORDINATES (If known): **Multiple locations along an existing electric transmission ROW in Hudson**
☐ Latitude/Longitude ☐ UTM ☐ State Plane

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a. Natural Heritage Bureau File ID: NHB **14- 4809.**

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

6. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Holden, Joshua (NEP); Nelson, Kurt (PSNH)**		
TRUST / COMPANY NAME: **New England Power Company (NEP); Public Service of New Hampshire (PSNH)**	MAILING ADDRESS: **40 Sylvan Road, 3rd Floor, East Wing (NEP); 13 Legends Drive (PSNH)**	
TOWN/CITY: **Waltham (NEP); Hooksett (PSNH)**	STATE: **MA (NEP); NH (PSNH)**	ZIP CODE: **02451-1120(NEP); 03106 (PSNH)**
EMAIL or FAX: **joshua.holden@nationalgrid.com (NEP); kurt.nelson@eversource.com (PSNH)**	PHONE: **781-907-3648 (NEP); 603-634-3256 (PSNH)**	
ELECTRONIC COMMUNICATION: By initialing here: JBH/KJN, I hereby authorize DES to communicate all matters relative to this application electronically		

7. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.: **ROW consists of existing easements and fee ownerships**		
TRUST / COMPANY NAME:	MAILING ADDRESS:	
TOWN/CITY:	STATE:	ZIP CODE:
EMAIL or FAX:	PHONE:	
ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize DES to communicate all matters relative to this application electronically		

8. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: **Trefry, Sherrie L.**	COMPANY NAME: **Vanasse Hangen Brustlin, Inc.**	
MAILING ADDRESS: **2 Bedford Farms Drive, Suite 200**		
TOWN/CITY: **Bedford**	STATE: **NH**	ZIP CODE: **03110**
EMAIL or FAX: **strefry@vhb.com**	PHONE: **603-391-3900**	
ELECTRONIC COMMUNICATION: By initialing here **SLT**, I hereby authorize DES to communicate all matters relative to this application electronically		

9. PROPERTY OWNER SIGNATURE:

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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 DES correspondence. DES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
Joshua B Holden	**Joshua B Holden** **Lead Environmental Scientist** **New England Power Company**	12 / 7 / 2015

Kurt I. Nelson
PSNH
12/7/2015

Attachment A

Wetland Permitting Plans

■

Path: \\nhbedata\checkin\12650.00\GIS\Project\NH_Mapping\WetlandPermit\WetlandPermitting.mxd

UNNAMED INTERMITTENT STREAM

UNNAMED INTERMITTENT STREAM

SA-11 R4SB5 PFO1E WA 36A

PSS1E

R4SB5/6

SA-11 R4SB5/6

PSS/EM1E

PSS1E

WA 36

PSS1E

WA 37 PSS1E

Relocated Line Y-151

Line O-215

NEP

(Existing Line Y-151)

New Line 3124

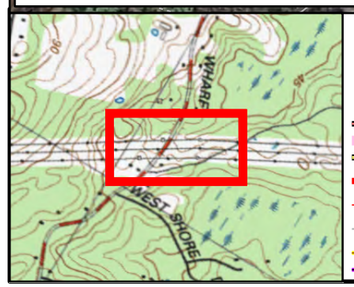
PELHAM

Line N-214

DUTTON RD

LITTLE ISLAND POND PRIME WETLAND

Revised access and structure locations, November 20, 2015



Existing Structure
Existing Structure to be Removed
Proposed Structure
Proposed Guy Anchor Location
Existing Transmission Line
Existing Line to be Removed
Proposed Transmission Line
Surveyed ROW Boundary
NEP Property
Parcel Boundary
Primary Access
Alternate Access

Gas Pipeline ROW
Sewer Line ROW
Delineated Wetland Edge
Estimated Wetland Edge
Wetland Resource Area
Open Water
Vernal Pool
Delineated Perennial Stream
Delineated Intermittent Stream
Delineated Ordinary High Water

USGS Stream
NHDES Prime Wetland
FEMA 100-yr Floodplain

Construction Work Pad (100'x100')
Pull Pad Site (100'x300')
Guard Protection Area (50'x50')
Swamp Mat Construction Work Pad
Swamp Mat Access
Proposed Permanent Crossing
Laydown Area
Stone Apron
Culvert
Fence

Stone Wall
Erosion Control
Tree Clearing Area
Photo Location
Town Boundary

1 Inch = 100 Feet
0 50 100 200
Feet

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to Scobie Pond 345 kV Substation NH

Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,Normandeau

Date: 11/20/2015

nationalgrid

EVERSOURCE ENERGY

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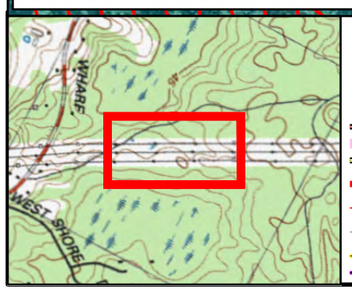

- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Proposed Guy Anchor Location
- Existing Transmission Line
- Existing Line to be Removed
- Proposed Transmission Line
- Surveyed ROW Boundary
- NEP Property
- Parcel Boundary
- Primary Access
- Alternate Access
- Gas Pipeline ROW
- Sewer Line ROW
- Delineated Wetland Edge
- Estimated Wetland Edge
- Wetland Resource Area
- Open Water
- Vernal Pool
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Ordinary High Water
- USGS Stream
- NHDES Prime Wetland
- FEMA 100-yr Floodplain
- Construction Work Pad (100'x100')
- Pull Pad Site (100'x300')
- Guard Protection Area (50'x50')
- Swamp Mat Construction Work Pad
- Swamp Mat Access
- Proposed Permanent Crossing
- Laydown Area
- Stone Apron
- Culvert
- Fence
- Stone Wall
- Erosion Control
- Tree Clearing Area
- Photo Location
- Town Boundary

1 Inch = 100 Feet

0 50 100 200

Feet

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to Scobie Pond 345 kV Substation NH

Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,Normandeau

Date: 11/20/2015

nationalgrid

EVERSOURCE ENERGY

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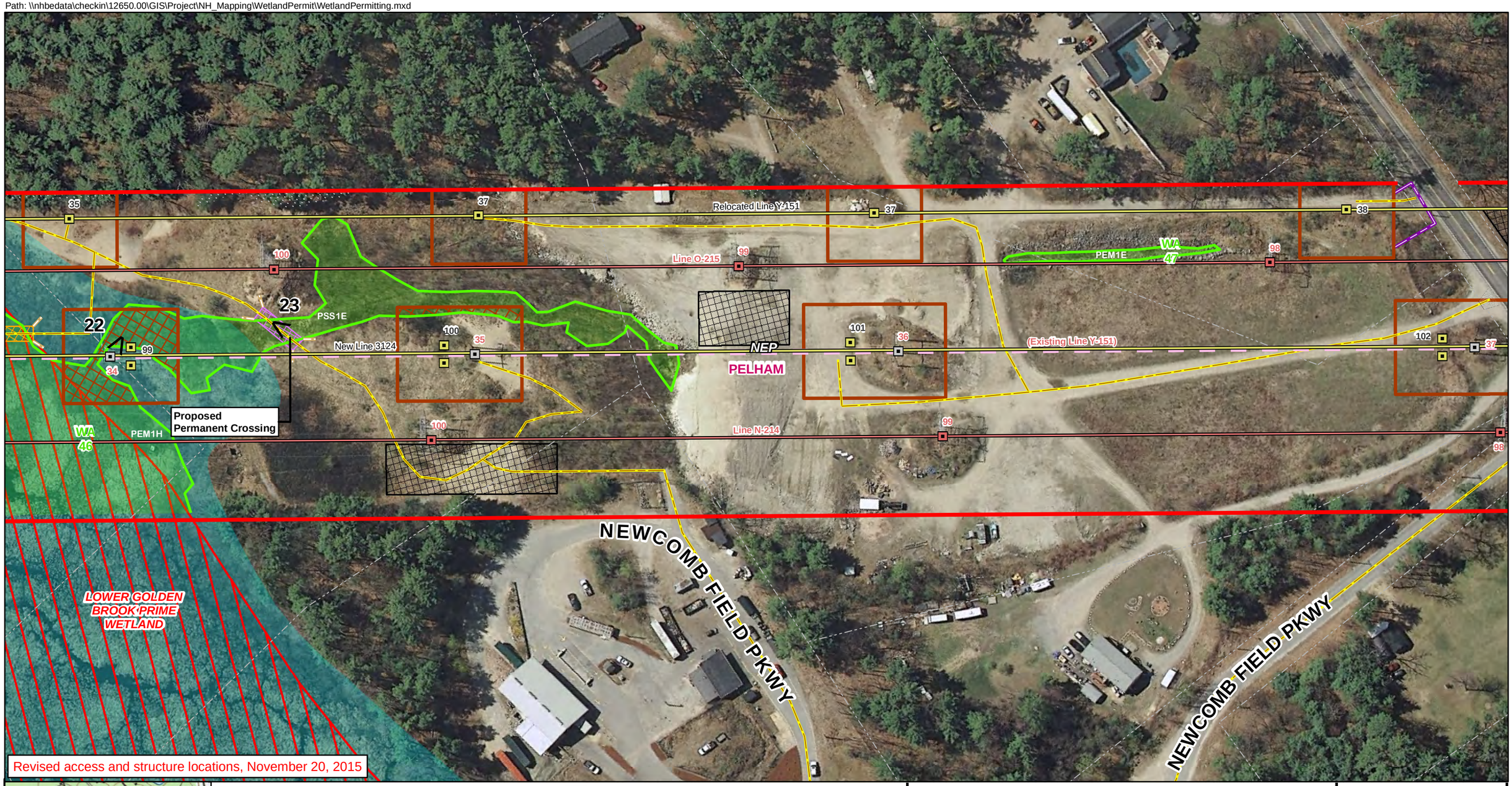

- Existing Structure
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- Proposed Guy Anchor Location
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- Surveyed ROW Boundary
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- Swamp Mat Access
- Proposed Permanent Crossing
- Laydown Area
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- Culvert
- Fence
- Stone Wall
- Erosion Control
- Tree Clearing Area
- Photo Location
- Town Boundary

1 Inch = 100 Feet

0 50 100 200

Feet

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

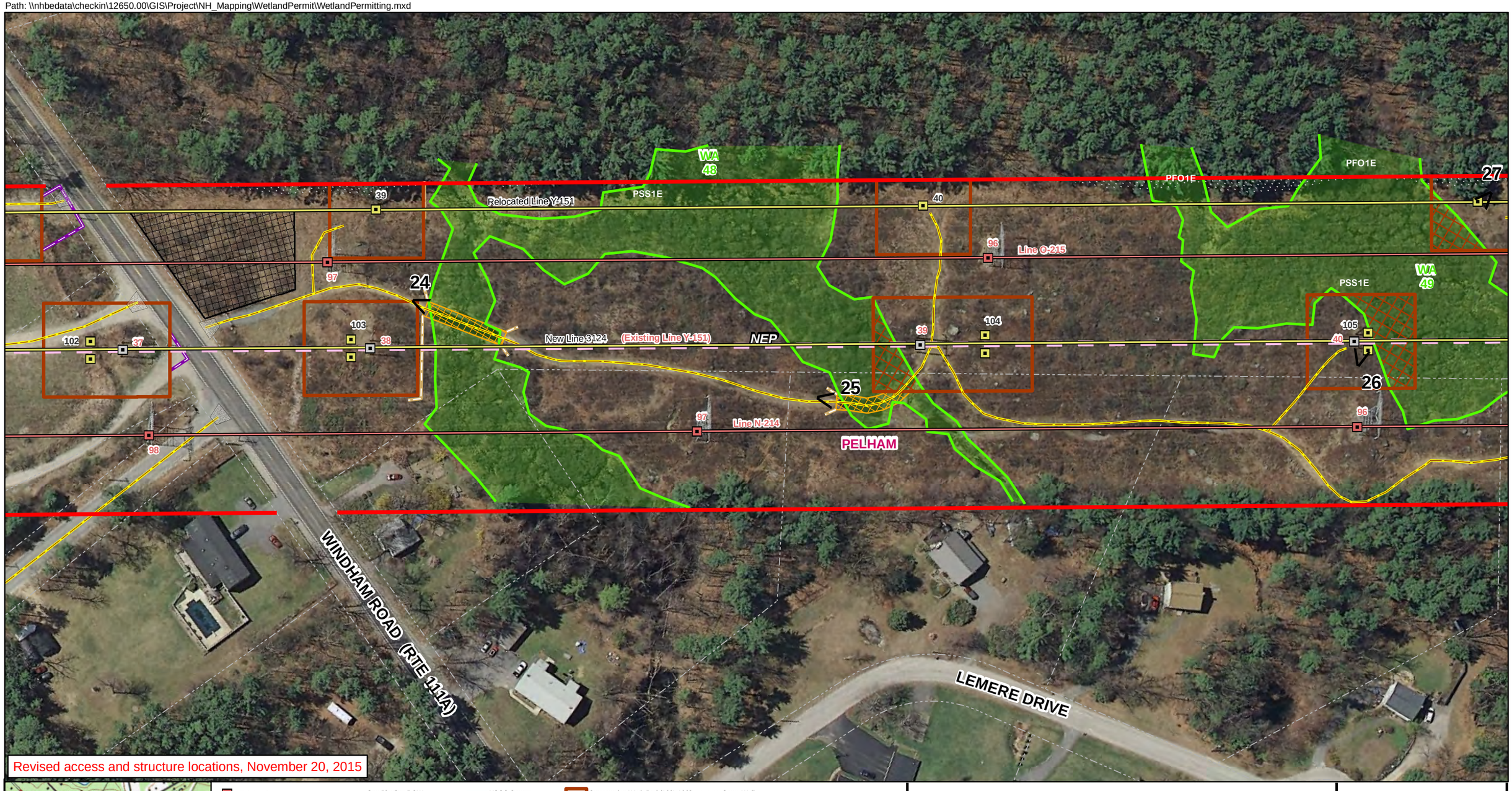
Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,Normandeau

Date: 11/20/2015

nationalgrid

EVERSOURCE ENERGY

Path: \\nhbedata\checkin\12650.00\GIS\Project\NH_Mapping\WetlandPermit\WetlandPermitting.mxd



Revised access and structure locations, November 20, 2015

- Existing Structure
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- Fence
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- Erosion Control
- Tree Clearing Area
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- Town Boundary

1 Inch = 100 Feet

0 50 100 200

Feet

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,Normandeau

Date: 11/20/2015

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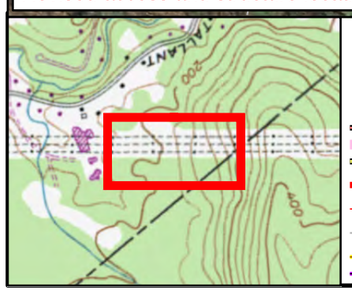
Revised access and structure locations, November 20, 2015



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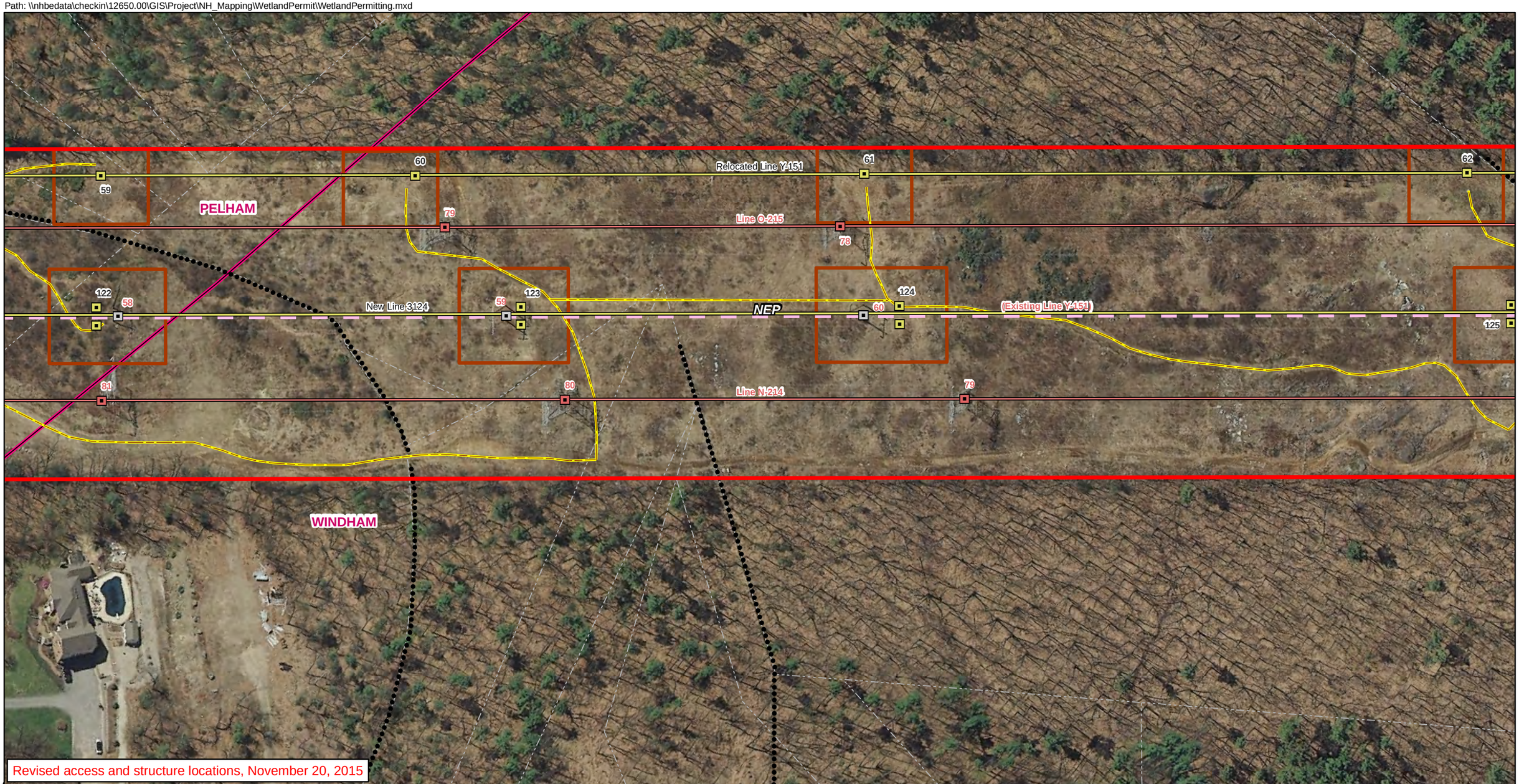

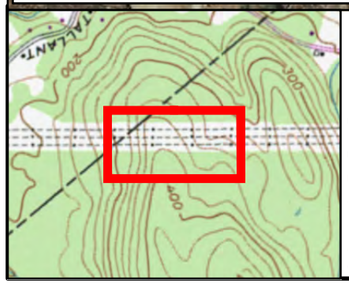

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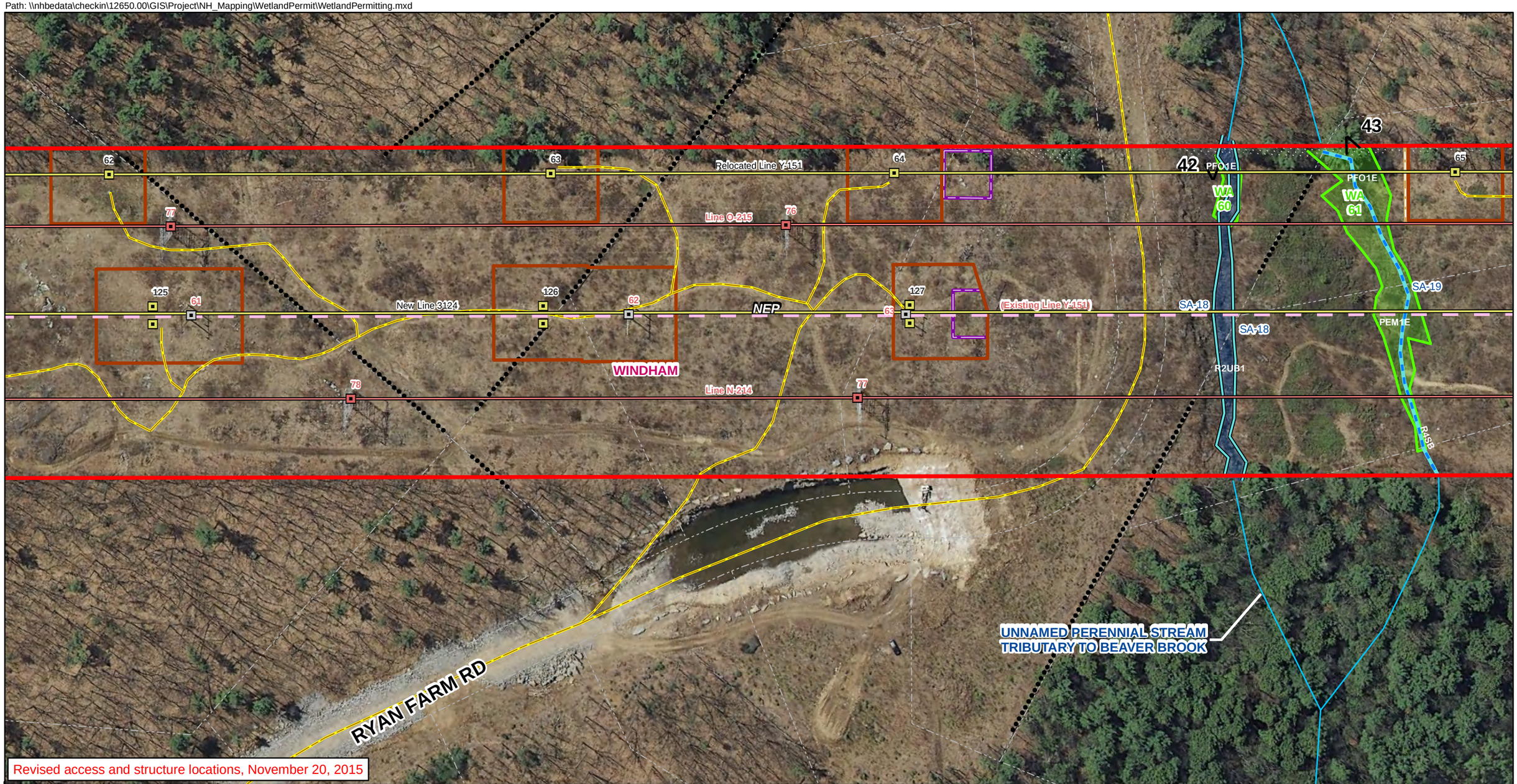

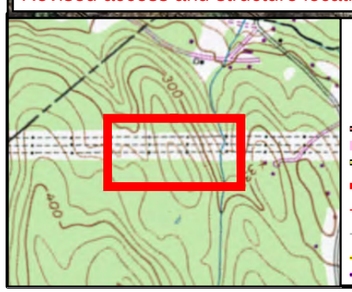

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PF01C
PAB3H
PEM1E
Line O-215
59
58
PSS1E
51
WA 74
147
New Line 3124
NEP
148
WA 75A
PSS1E
WA 75
59
Line N-214
58
R4SB4
SA-25
PSS1E
HUDSON
GRIFFIN RD

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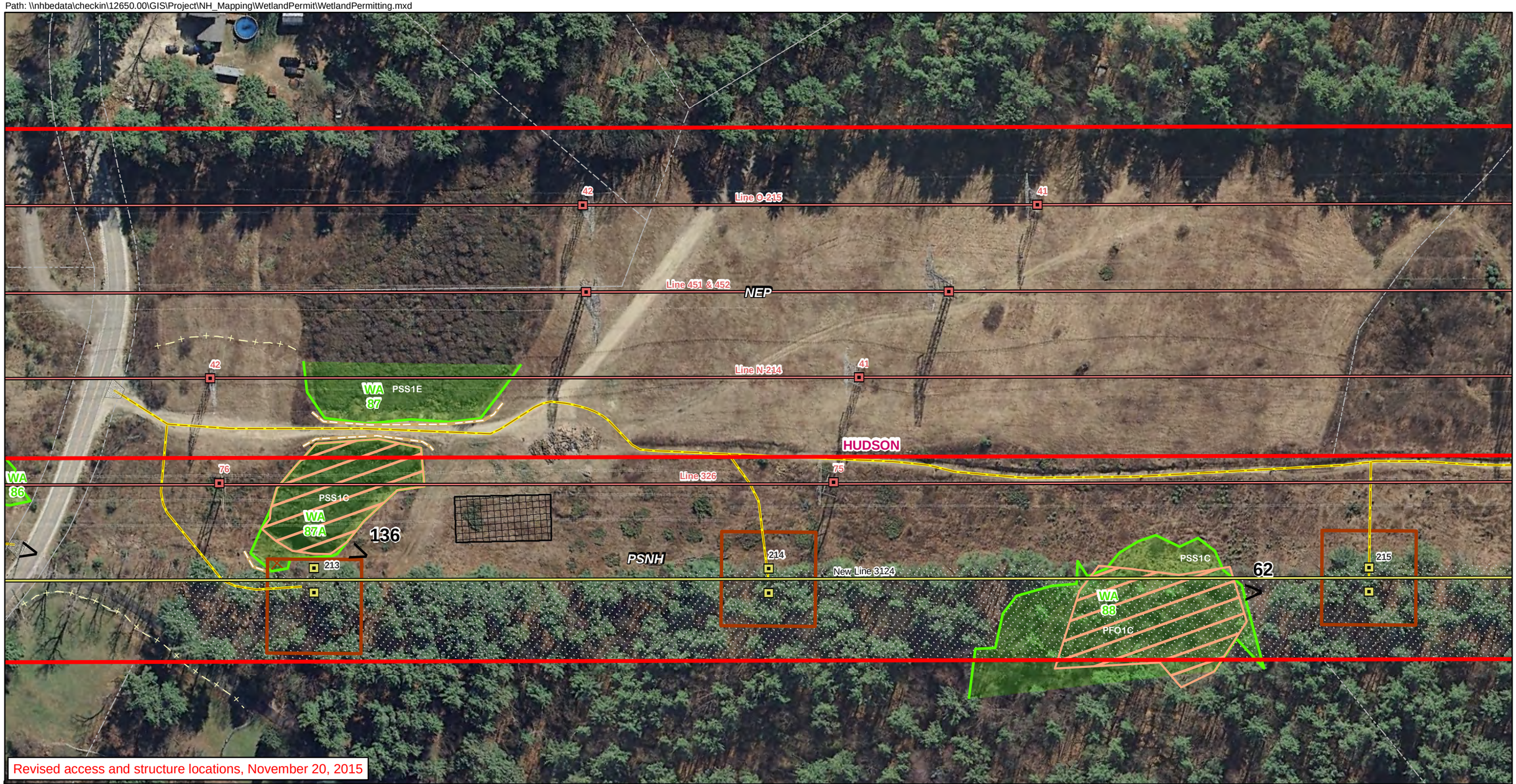

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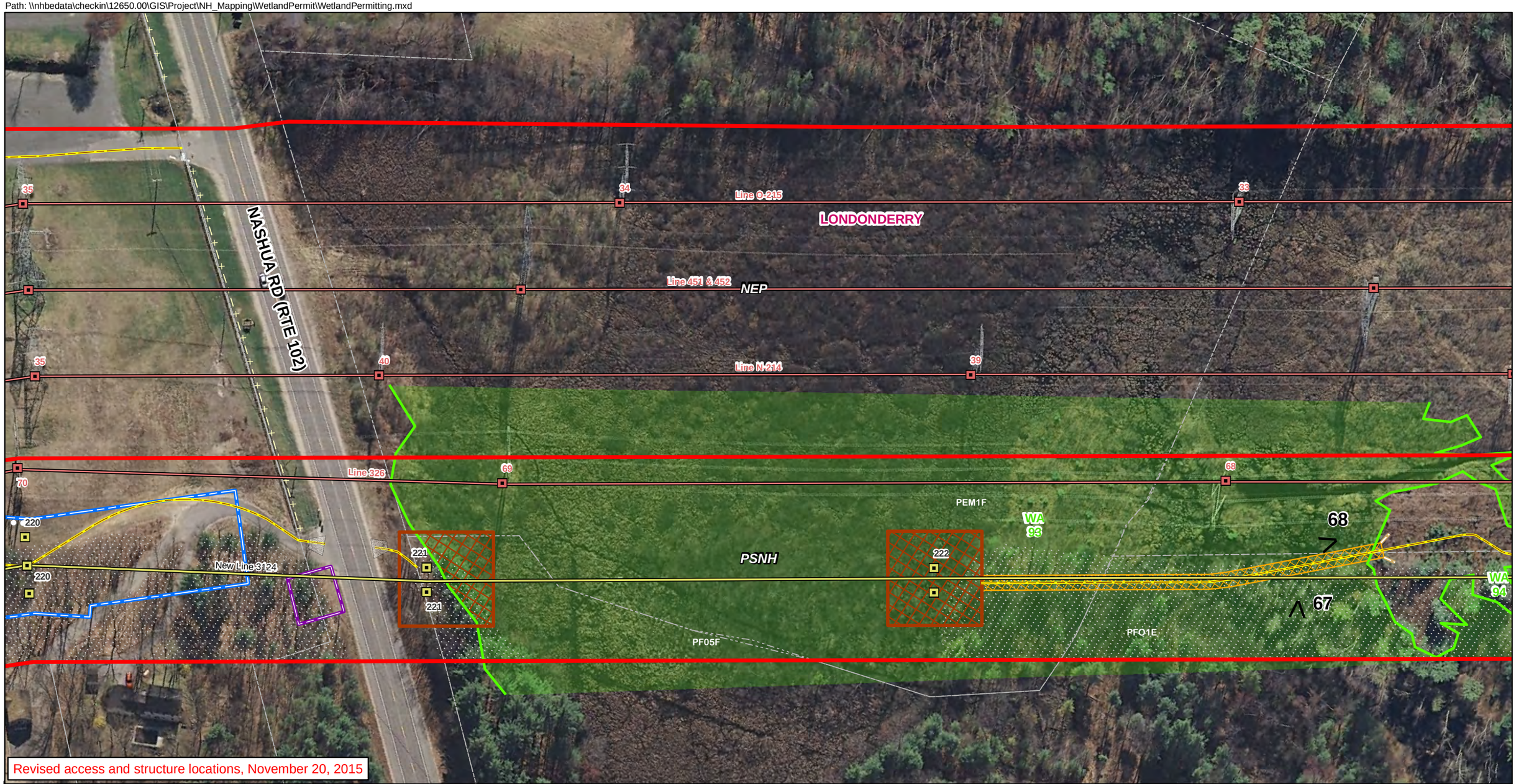

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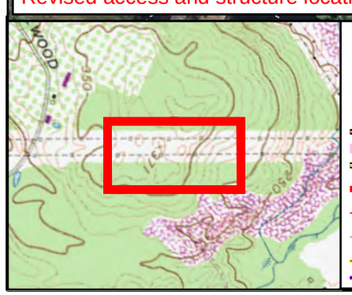
25
24
Line 0-215
23
LONDONDERRY
NEP
Line 451 & 452
30
29
Line N-214
28
PSNH
60
59
Line 326
58
230
231
232
New Line 3124
JASON DR

Revised access and structure locations, November 20, 2015



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UNNAMED PERENNIAL STREAM
TRIBUTARY TO NESENKEAG BROOK

PSNH
Line Z119
Line X116
WA 107
LONDONDERRY
22
Line O-215
21
Line 451 & 452
NEP
27
Line N-214
26
57
56
Line 326
233
234
PSNH
New Line 3124
85
PSS1F
SA-35
PSS1C
R4SB4
R2UB2
SA-34
235
WA 106
R4SB4

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WHEELWRIGHT CIRCLE

WA 139
PSS/EM1C
LONDONDERRY
Line 380
PFO5E
PSS1B
WA 144
30.5
WA 140
PSS1B
30
Line 326
29
28
PSS1B
WA 143
PSNH
PEM/SS1E
WA 142
PSS1B
114
115
261
262
New Line 3124
PFO1E
112
113
WA 141
PFO1C
WA 137
PSS/EM1E
Line S188
Line X116
Line Z119

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HOVEY RD

LONDONDERRY

Trolley Car Path

124

SA-149A

PSNH

Line 380

PEM1G

WA 149A

PEM1E

WA 149

16

15

Line 326

WA 148

PSS1B

121

275

276

PEM1H

New Line 3124

WA 147

PFO1C

PEM/SS1C

PFO5G

PFO5G

PFO5G

122

123

PSS1C

Line R187

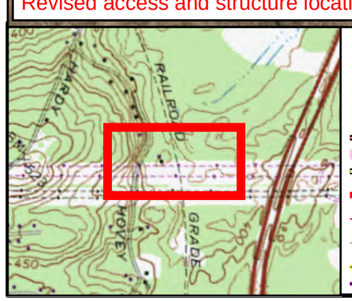
PSS1B

PEM1E

Line X116

PEM1G

Revised access and structure locations, November 20, 2015



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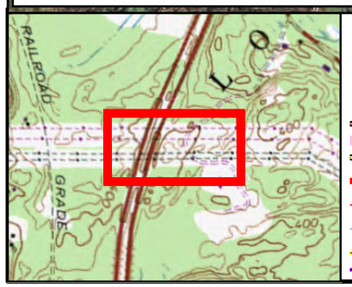
I-93 S
I-93 N
Line 380
LONDONDERRY
14
13
Line 326
12
277
278
New Line 3124
PSNH
PSS1C
WA 151
PEM1E
PFO1C
PFO1
WA 152
279
WA 150
PSS1C
PEM1E
Line R187
Line X116
Line Z119
PEM1E
WA 149A
WA 153
93
93
Access from Snowflake Lane

Revised access and structure locations, November 20, 2015



- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Proposed Guy Anchor Location
- Existing Transmission Line
- Existing Line to be Removed
- Proposed Transmission Line
- Surveyed ROW Boundary
- NEP Property
- Parcel Boundary
- Primary Access
- Alternate Access
- Gas Pipeline ROW
- Sewer Line ROW
- Delineated Wetland Edge
- Estimated Wetland Edge
- Wetland Resource Area
- Open Water
- Vernal Pool
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Ordinary High Water
- USGS Stream
- NHDES Prime Wetland
- FEMA 100-yr Floodplain
- Construction Work Pad (100'x100')
- Pull Pad Site (100'x300')
- Guard Protection Area (50'x50')
- Swamp Mat Construction Work Pad
- Swamp Mat Access
- Proposed Permanent Crossing
- Laydown Area
- Stone Apron
- Culvert
- Fence
- Stone Wall
- Erosion Control
- Tree Clearing Area
- Photo Location
- Town Boundary

1 Inch = 100 Feet
0 50 100 200
Feet

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to Scobie Pond 345 kV Substation NH

Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,Normandeau

Date: 11/20/2015

nationalgrid

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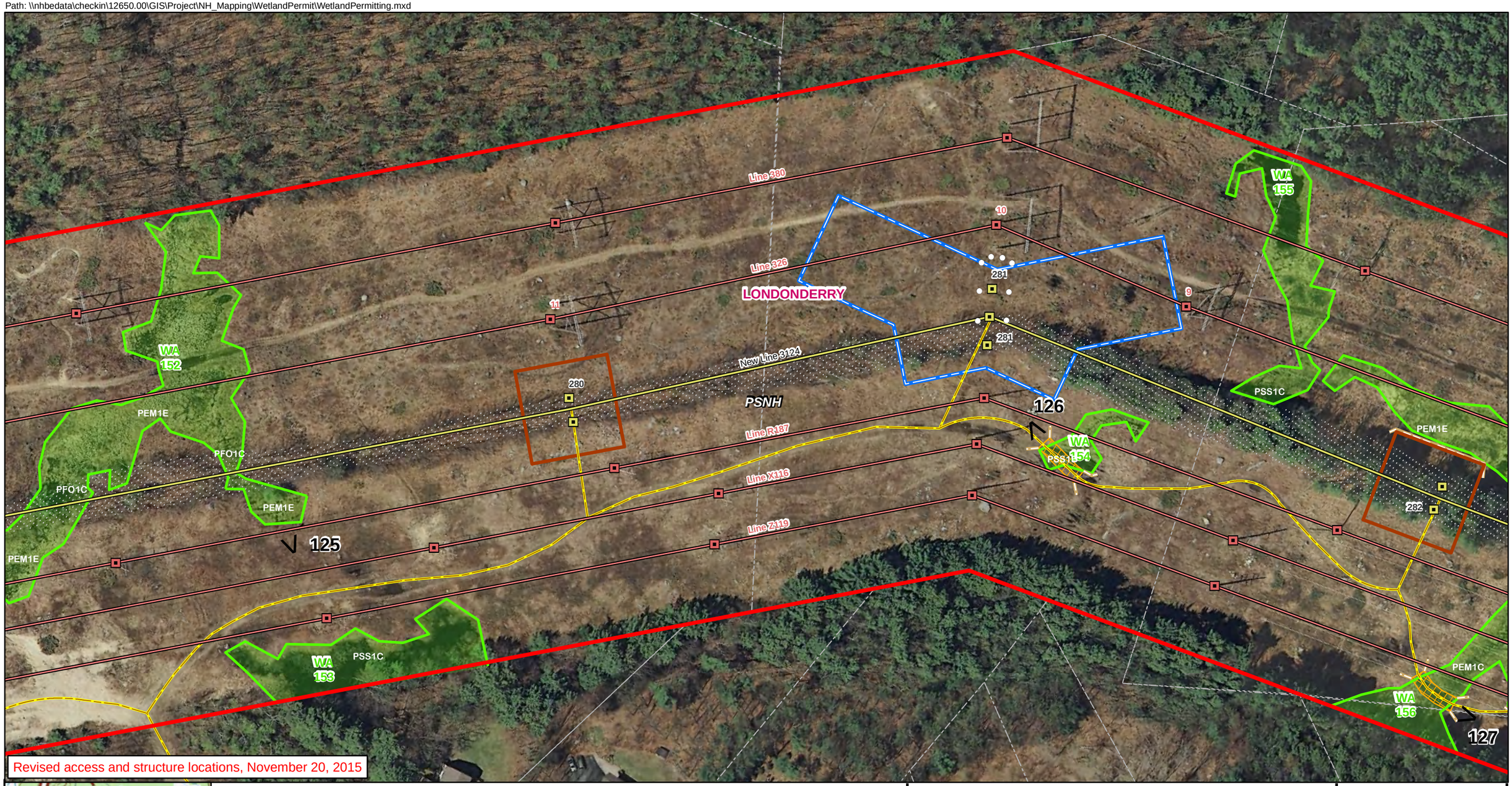

Revised access and structure locations, November 20, 2015

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nationalgrid

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General Construction Notes:

1. This plan set is provided to show jurisdictional impacts and required environmental controls only. Engineering documents should be consulted to determine the scope and location of all other construction activities. Proposed construction limits of disturbance are approximate.Contractor is responsible for minimizing earth disturbance, as practicable.
2. Erosion and sedimentation control measures shall be installed prior to start of work, shall be maintained, and shall remain in place during construction until all disturbed surfaces are stabilized. Following stabilization, erosion and sedimentation control measures shall be removed off-site and properly disposed.
3. Erosion and sedimentation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.The type and installation method of erosion and sediment controls shall be in accordance with National Grid's EG303NE (EG-303NE") or the BMP Manual for Utility Maintenance in and adjacent to Wetlands and Waterbodies in New Hampshire ("BMP Manual") (NHDRED, 2010) and any project specific permit conditions.
4. The environmental controls shown on these plans may need to be supplemented due to season of work, work methods proposed, and additional requirements of outstanding permits. Refer to BMP manuals and additional guidance documents, as needed.
5. The accessways shown are for vehicle access during construction. The accessways are not specifically shown for the use of tree clearing contractors, though to the extent they can, the clearing contractors should be using desiganted and existing access. Additional access may be needed during clearing and will be installed in accordance with approved forestry BMPs and manuals such as Best Management Practices for Erosion ontrol on Timber Harvesting Operations in New Hampshire, 2004. BMPs may include the use of timber matting, as may be required in wetlands.
6. Cut trees and branches may be left in wetlands at the discretion of the environmental monitor when densities are low and leaving the trees is the least impacting option.
7. If danger trees are identified during the course of construction, the Applicants will work within existing easment rights or with property owner permission to remove the danger trees.
8. Swamp matting shown on the plans represents the square footage and alignment of matting which is required and has been approved by the regulators. Additional layers of mats may be required at certain locations. Any increase in the number, change in alignment, or decision not to use swamp mats must be approved by an authorized representative of the Permittee(s) and, as appropriate, regulators.
9. Temporary stone construction entrances will be used at all points of construction ingress/egress from public and private roadways in accordance with EG303NE and BMP Manual.
10. The selected contractor is responsible for street sweeping, as required, at points of ingress/egress from public and private roadways in accordance with the NPDES Construction General Permit.
11. Selected contractor will be responsible for certifying that all equipment on the project is clean of invasive species prior to arriving onsite. The contractor will also be responsible for cleaning equipment as it is moved within the project to reduce the risk of spreading invasive plant seeds and fragments.
12. Span streams or drainage swales with temporary bridge or swamp mats that are free of soil and debris. Protect all existing culverts encountered along access roads within the ROW.
13. Proposed construction limits of disturbance as shown are approximate. The selected contractor is responsilbe for minimizing earth disturbance as practicable.
14. The selected contractor is responsible for installing waterbars and other similar measures to prevent concentrated run-off.
15. Any excavated material shall be placed outside of jurisdictional areas or removed from the site. Contractor should contact the environmental monitor before moving any soil off site.
16. If dewatering is required, dewatering basins shall be placed in uplands areas and discharge water into upland areas.
17. Areas of soil disturbance shall be stabilized following construction in accordance with EG-303NE or BMP Manual.

Merrimack Valley Reliability Project

Wetland Permitting Plan Set
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

Source:
National Grid

nationalgrid

EVERSOURCE ENERGY

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Wetland Delineation Notes:

1. Wetlands in Londonderry were delineated in the Fall of 2012 by Normandeau Associates in support of a previous PSNH project. During September and October 2014, and April 2015, VHB Wetlands Scientists reviewed and confirmed previously delineated wetland areas and extended boundaries as needed to include the entire Project area. VHB also delineated a number of wetlands, not previously delineated by Normandeau, that were outside the study area for the previous PSNH project. Wetlands were delineated using alpha-numerically coded pink flagging tape.

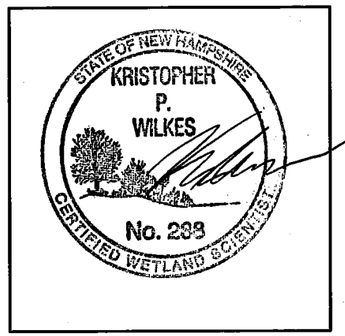
2. Wetland delineation was performed to the standards in the *Corps of Engineers Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (January 2012).

3. Hydric soils were determined in accordance with *Field Indicators for Identifying Hydric Soils in the United States, Version 7.0* published by the Natural Resources Conservation Service, and the *Field Indicators for Identifying Hydric Soils in New England, Version 3.0* published by the New England Interstate Water Pollution Control Commission.

4. Dominance of wetland vegetation was assessed using the *Northcentral and Northeast 2014 Final Regional Wetland Plant List* published by the U.S. Army Corps of Engineers.

5. Wetland were classified using the USFWS methodology *Classification of Wetlands and Deepwater* Habitats of the United States (Cowardin et al. 1979, revised 1985).

6. Wetland function and values were assessed using the *Highway Methodology Workbook Supplement* (USACOE, 1999).



Merrimack Valley Reliability Project

Wetland Permitting Plan Set
Tewksbury 22A Substation MA to
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Source:
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nationalgrid

EVERSOURCE ENERGY

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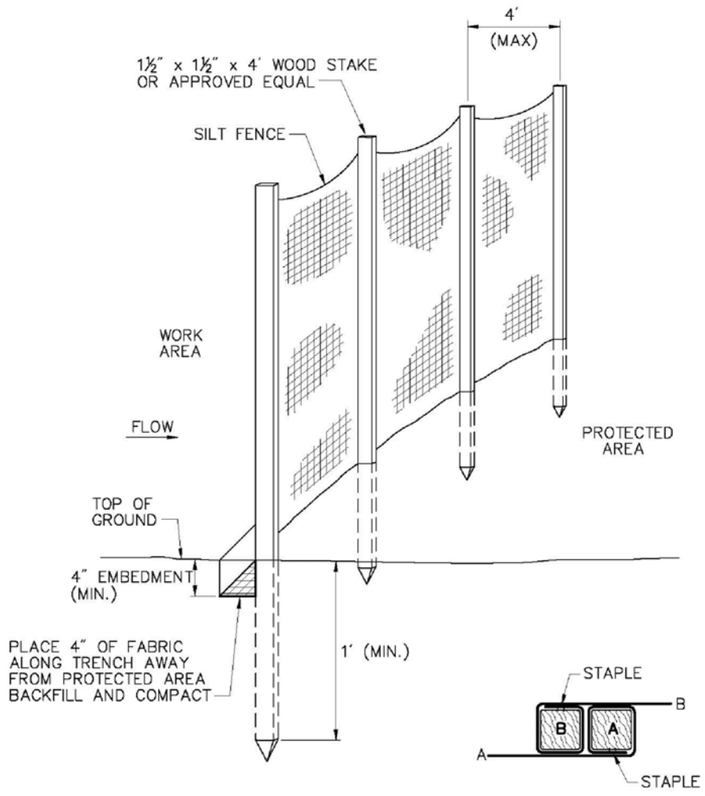
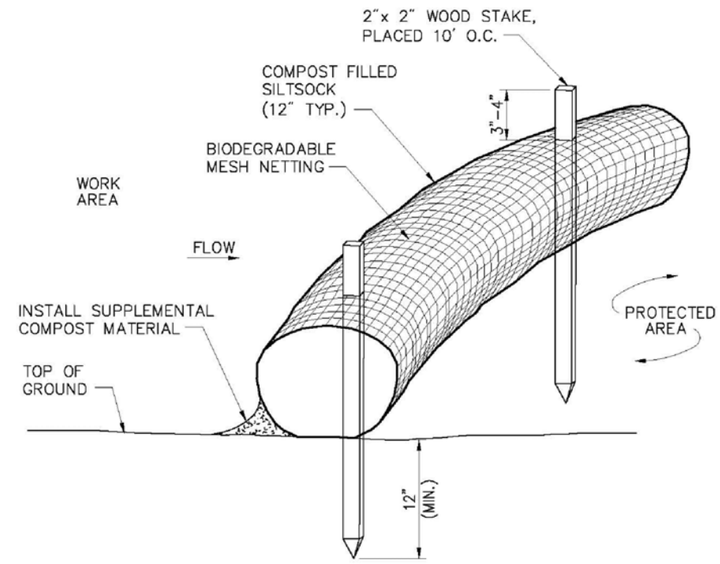


Wood Stake Joint Detail

Silt Fence Barrier

6/08

N.T.S. Source: VHB REV LD_650



Notes:

1. SILTSOCK SHALL BE FILTREXX SILTSOXX, OR APPROVED EQUAL.
2. SILTSOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Siltsock - Erosion Control Barrier

8/12

N.T.S. Source: VHB LD_658

Constuction Details

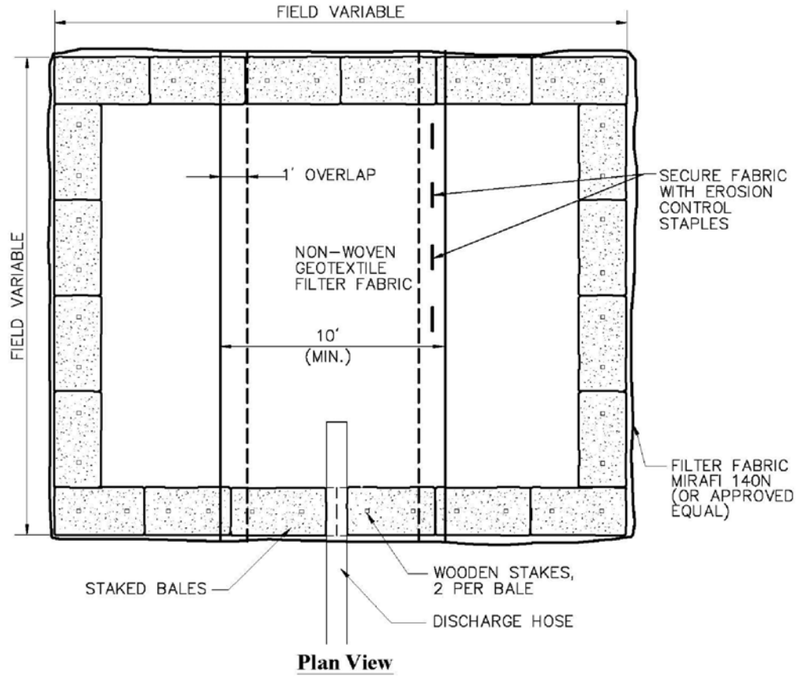
Merrimack Valley Reliability Project

Wetland Permitting Plan Set
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

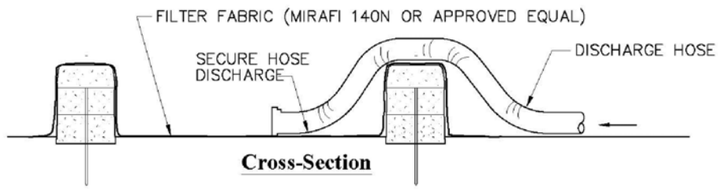
Source:
National Grid

nationalgrid

EVERSOURCE ENERGY



Plan View



Cross-Section

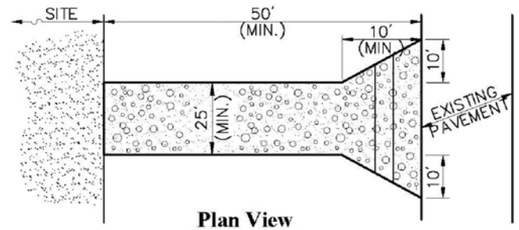
Notes:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.

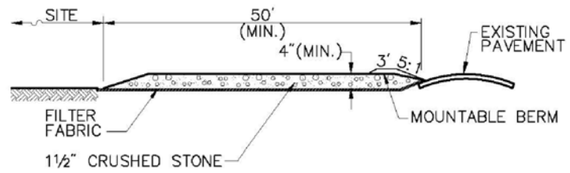
Dewatering Straw Bale Basin

2/11

N.T.S. Source: VHB REV LD_690



Plan View



Cross-section

Notes:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Stabilized Construction Exit

6/08

N.T.S. Source: VHB REV LD_682

Constuction Details

Merrimack Valley Reliability Project

Wetland Permitting Plan Set
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

Source:
National Grid

nationalgrid

EVERSOURCE ENERGY

Attachment B

Wetland and Stream Impact Summary Tables

■

Wetland Impact Summary Table

■

Merrimack Valley Reliability Project Impacted Wetlands in NH

WETLAND ID	COWARDIN CLASS	PRINCIPAL FUNCTION&VALUES	PHOTOS	Project Impacts					Vernal Pool Present? / ID	Associated Stream Channel? Name/Type/Cowardin Class	Other Comments
				Temporary		Permanent		Clearing (Sq Ft)			
				Type	Impact (Sq Ft)	Type	Impact (Sq Ft)				
SEGMENT 2 (NEP)											
30	PSS1E	Wetland provides no significant functions/values	1	Work Pad	1,221	None	0	98	No	No	Narrow swale dominated by glossy buckthorn, drains west into forested landscape.
31	PSS1E, PFO1E	Wetland provides no significant functions/values	2	None	0	None	0	3669	No	No	Wetland dominated by glossy buckthorn.
32	PSS1E	Production Export	3	Work Pad	1,918	None	0	0	No	No	Wetland contains purple loosestrife and glossy buckthorn. Drains in a southerly direction.
33	PSS1E	Wetland provides no significant functions/values	4	Work Pad	2,508	None	0	0	No	No	Wetland dominated by purple loosestrife. Shows signs of heavy historic disturbance from ROW development.
34	PSS1E, PEM1E	Wetland provides no significant functions/values	5	Work Pad	1,156	None	0	0	No	No	Isolated wetland, contains purple loosestrife and glossy buckthorn.
36	PSS/EM1E, PSS1E	Wildlife Habitat	6, 7, 8	Access Matting, Work Pad	6,295	None	0	136	No	SA-11/Intermittent/R4SB5/6	Highly disturbed by ATV activity.
36A	PFO1E, PSS1E	Sediment/Toxicant Retention	9	Pull Pad	12,851	Structure Installation	50	5161	No	SA-11/Intermittent/R4SB5	Primarily forested with intermittent stream draining to the south towards Dutton Road.
36B	PSS1E	Floodflow alteration, sediment/Toxicant Retention	No Photo	Work Pad	792	None	0	0	No	SA-11/Intermittent/R4SB5	Receives drainage from intermittent stream.
37	PSS1E	Wetland provides no significant functions/values	10	Access Matting	149	None	0	0	No	No	Densely vegetated isolated wetland dranins across existing ATV trail.
39	PSS1E, PFO1E	Wildlife Habitat	11, 12	Work Pad, Access Matting	3,364	None	0	356	Yes/ VP-39	No	Densely vegetated wetland swale within ROW drains in a southerly direction.
40	PSS1E	Groundwater recharge/Wildlife Habitat	13	None	0	None	0	279	Yes/ VP-40	No	Potential Vernal Pool appears to be located in a previously excavated area.
41	PSS1E	Groundwater recharge/discharge	14	None	0	None	0	189	No	No	Wetland is an old borrow pit, partially filled with boulders/construction debris. Dominated by glossy buckthorn.
42C	PSS/EM1E, PFO5E	Wildlife Habitat	15	Work Pad, Access Matting	5,107	None	0	211	No	No	Large scrub-shrub/emergent wetland extending/draining off ROW to the west. ATV trail crosses wetland on eastern side of the ROW.
43	PSS1C	Wetland provides no significant functions/values	16	None	0	None	0	2034	Yes/ VP-43	No	Dominated by glossy buckthorn, drains west off ROW.
44	PSS1E, PFO5E	Wildlife Habitat	17, 18	Work Pad, Access Matting	7,647	None	0	554	No	SA-12/Intermittent/R2UB3	Large PSS complex drains westerly to small intermittent stream.
45	PSS/EM1E, PSS1E, PFO5E	Groundwater recharge	19, 20	Pull Pad	25,574	ROW Access Road Improvements	2103	2336	No	SA-13/Intermittent/R4SB5	
46	PUBH, PEM1H, PSS1E	Floodflow Alteration, Fish Habitat, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	21, 22, 23	Work Pad, Access Matting	35,622	Structure Installation, ROW Access Road Improvements	628	59	No	SA-14/Golden Brook/Perennial/R2UB2/3	Designated Prime Wetland (Lower Golden Brook Prime Wetland).
48	PSS1E	Wildlife Habitat	24, 25	Work Pad, Access Matting	4,791	None	0	62	No	No	Wetland crossed multiple times by ATV trail. Wetland drains to the west off-ROW.
49	PSS1E, PFO1E	Production/Export	26, 27	Work Pad	6,850	None	0	1069	No	No	
50	PSS1E	Wildlife Habitat	28, 29, 30, 31	Work Pad, Access Matting	9,351	ROW Access Road Improvements	954	1029	No	No	Large scrub-shrub wetland with undulating topography and pits with sphagnum moss. Deer beds abundant.
52	PSS1E	Nutrient Removal	32, 33, 34	Work Pad, Access Matting	2,542	None	0	109	No	No	Scrub-shrub wetland swale along the edge of a hayfield.

Merrimack Valley Reliability Project Impacted Wetlands in NH

WETLAND ID	COWARDIN CLASS	PRINCIPAL FUNCTION&VALUES	PHOTOS	Project Impacts				Clearing (Sq Ft)	Vernal Pool Present? / ID	Associated Stream Channel? Name/Type/Cowardin Class	Other Comments
				Temporary		Permanent					
				Type	Impact (Sq Ft)	Type	Impact (Sq Ft)				
53	PSS1E, PEM1E	Nutrient Removal	35	Work Pad, Access Matting	2,974	None	0	0	No	No	Wetland located within old farm field with shrubs starting to populate area.
OR2	PEM1E	Nutrient Removal	135	Access Matting	348	None	0	0	No	No	Wetland swale through active hayfeild
54	PFO1C, PSS1E	Nutrient Removal	36	Work Pad	3,433	None	0	923	No	No	Thickly vegetated reclaimed farm field.
54A	PEM1E	Nutrient Removal, Production Export	37	Work Pad, Access Matting	10,828	Structure Installation	15	0	No	No	Wetland located within active hayfield.
59	PSS/EM1E, PUBH	Groundwater discharge	38, 39	Work Pad, Access Matting	13,586	None	0	121	No	SA-16/Perennial /R4SB4/5	Wetland appears to be located within a series of naturalized gravel pits.
59D	PUBH, PSS1E	Groundwater recharge	40	Work Pad	845	None	0	0	No	No	Wetland drains into excavated pond next to residential driveway.
59G	PSS1E, PEM1E	Wetland provides no significant functions/values	41	Work Pad	284	None	0	0	No	No	Narrow drainage from excavated pond.
60	PFO1E	Sediment/Shoreline Stabilization, Wildlife Habitat	42	None	0	None	0	134	No	SA-18/Perennial/R2UB1	
61	PEM1E, PFO1E	Sediment/Shoreline Stabilization, Wildlife Habitat	43	None	0	None	0	537	No	SA-19/Intermittent/R4SB3	
62	PSS1E	Wetland provides no significant functions/values	44	None	0	ROW Access Road Improvements	250	94	No	No	Densely vegetated narrow PSS wetland swale draining westerly.
65	PSS1E	Sediment/Shoreline Stabilization	45	None	0	None	0	605	No	SA-22/Intermittent/R4SB3/4	Wetland borders intermittent channel, drains east to west across ROW.
69	PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	46, 47	Work Pad, Access Matting, Guard Protection	5,285	None	0	0	No	No	Wetland located directly adjacent to substation and entrance driveway.
69A	PSS1E, PFO1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	48	Work Pad	1,742	None	0	452	No	SA-23/Intermittent/R4SB4	Wetland associated with intermittent stream channel.
73	PUBHx, PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	50	None	0	None	0	198	No	No	Ponded area located in wetland, appears to be man-made.
75A	PAB3H, PEM1E, PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	51	Work Pad	1,402	None	0	0	No	No	Large densely vegetated wetland system with open water (flooded area) present, extends outside of ROW.
75B	PSS1E, PEM1E	Floodflow Alteration, Nutrient Removal	52, 53	Work Pad, Access Matting	2,056	None	0	0	No	No	Wetland located adjacent to active farmland.
77B	PEM1F, PFO1E	Wildlife Habitat, Sediment/Toxicant Retention, Floodflow Alteration	55	None	0	None	0	39527	No	SA-26/Intermittent/R4SB4 SA-27/Perennial/R2UB2	Hydrologically connected to Robinson Pond south of the ROW
77C	PSS1C, PFO1C	Sediment/Toxicant Retention, Floodflow Alteration	56, 57	Access Matting	392	None	0	15175	No	SA-28/Intermittent/R4SB3	Wetland associated with intermittent channel,flows east to west.
77D	PSS1C	Sediment/Toxicant Retention, Floodflow Alteration	58	Access Matting	1,333	None	0	0	No	SA-28/Intermittent/R4SB3	Wetland associated with intermittent channel, flows east to west.
SEGMENT 3 (PSNH)											
78	PSS1B	Wetland provides no significant functions/values	54	Pull Pad, Access Matting	11,014	Structure Installation	100	5105	No	No	Start of Eversource ROW.

Merrimack Valley Reliability Project Impacted Wetlands in NH

WETLAND ID	COWARDIN CLASS	PRINCIPAL FUNCTION&VALUES	PHOTOS	Project Impacts				Clearing (Sq Ft)	Vernal Pool Present? / ID	Associated Stream Channel? Name/Type/Cowardin Class	Other Comments
				Temporary		Permanent					
				Type	Impact (Sq Ft)	Type	Impact (Sq Ft)				
86	PSS1E, PSS1B, PFO1E, PFO1B	Floodflow Alteration, Sediment/Toxicant Retention	59, 60, 61	Work Pad, Access Matting	12,620	Structure Installation	25	39988	No	No	Wetland located at base of steep rocky slope/outcrop that extends across ROW.
87A	PSS1C	Floodflow Alteration, Wildlife Habitat	136	Work Pad	258	None	0	0	Yes/VP-87A	No	Hydrologically connected to WA 87 via culvert under existing ROW access road.
88	PFO1C, PSS1C	Wildlife Habitat	62	None	0	None	0	21737	Yes/ VP-88	No	
89	PUB2Hb, PEM1G	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge	63	None	0	None	0	3390	No	SA-30/Chase Brook/Perennial/R2UB2Hb	Beaver activity - dam present.
90	PEM1Gx, PSS1C	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge	64	None	0	None	0	475	Yes/ VP-90	No	PEM/VP portion of wetland appears to be not natural, likely excavated.
91	PFO1C	Flodflow Alteration, Sediment/Toxicant Retention, Wildlife Habitat	65	None	0	None	0	8	No	No	Wetland mostly outside project area.
92	PAB4E,PEM1E	Wildlife Habitat, Floodflow Alteration	66	None	0	None	0	3753	Yes/ VP-92	SA-31/Intermittent/R4SB	Wetland drains west to intermittent channel. Signs of variable water levels present.
93	PEM1F, PFO5F, PFO1E	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge, Sediment/Toxicant Retention	67, 68	Work Pad, Access Matting	21,711	Structure Installation	37.5	58790	No	No	Large emergent complex located downslope of Nashua Road (Route 102).
94	PSS1C	Wetland provides no significant functions/values	69	None	0	None	0	254	No	No	Small isolated wetland.
95	PSS1C	Floodflow Alteration, Wildlife Habitat	70	Work Pad	838	None	0	0	No	No	
97	PEM1H, PEM/SS1F	Groundwater Recharge/Discharge, Floodflow Alteration, Wildlife Habitat	71, 72	Access Matting	2,574	None	0	1410	No	SA-32/Nesenkeag Brook/Perennial/R2UB2	Flooded/ponded area associated with Nesenkeag Brook.
98	PFO1C, PEM/SS1E	Wildlife Habitat	73	None	0	None	0	3963	Yes/ VP-98	No	Vernal Pool present within wetland, vegetation densisty high.
99	PFO1B	Floodflow Alteration, Wildlife Habitat	74	None	0	None	0	70	No	No	Wetland mostly outside project area.
101	PFO1E, PAB3G	Floodflow Alteration, Wildlife Habitat	75, 76	Work Pad	3,298	None	0	17957	Yes/ VP-101	No	Northern portion of wetland contains aquatic bed habitat/ponded water.
102	PFO1C, PEM/SS1C	Wildlife Habitat, Groundwater Recharge/Discharge, Nutrient Removal, Sediment/Toxicant Retention	78, 79	Work Pad	692	None	0	20423	Yes/ VP-102	No	Forested wetland transitions into scrub-shrub/emergent wetland within cleared ROW.
102A	PFO1C	Same as 102.	77	None	0	None	0	2344	No	No	
102C	PFO1C	Same as 102.	80	None	0	None	0	1210	No	No	
104	PEM1F	Floodflow Alteration	81	None	0	None	0	731	No	SA-33/Intermittent/R4SB3	Intermittent channel feeds wetland from the east (culvert under Elwood Road).
105	PFO1B	Nurient Removal, Sediment/Toxicant Retention, Floodflow Alteration	82	None	0	None	0	13747	No	No	
105A	PFO1B	Same as 105.	83	None	0	None	0	1072	No	No	
105B	PUB2Hx	Same as 105.	84	None	0	None	0	949	No	No	Appears to be a man-made pond.

Merrimack Valley Reliability Project Impacted Wetlands in NH

WETLAND ID	COWARDIN CLASS	PRINCIPAL FUNCTION&VALUES	PHOTOS	Project Impacts					Vernal Pool Present? / ID	Associated Stream Channel? Name/Type/Cowardin Class	Other Comments
				Temporary		Permanent		Clearing (Sq Ft)			
				Type	Impact (Sq Ft)	Type	Impact (Sq Ft)				
106	PSS1C, PSS1F	Floodflow Alteration, Sediment/Toxicant Retention, Nurient Removal, Wildlife Habitat, Sediment/Shoreline Stabilization.	85	None	0	None	0	2217	No	SA-34/Perennial/R2UB2 SA-35/Intermittent/R4SB4	Beaver Activity - dam - flooded. Several intermittent channels feed into perennial stream.
SEGMENT 4 (PSNH)											
108	PEM1E	Groundwater Recharge, Floodflow Alteration	86	Pull Pad	16,392	None	0	0	No	No	Emergent wetland located in depresisonal area.
109	PSS1C	Wetland provides no significant functions/values	87	Pull Pad	768	None	0	0	No	No	Small isolated wetland in between ROW access roads.
OR3	PSS1C	Wetland provides no significant functions/values	No Photo	Access Matting	448	None	0	0	No	No	Small previously disturbed wetland, drains over existing ROW access road.
110	PEM1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	88	None	0	None	0	2140	No	SA-36/Perennial/R2UB2	Stream not well defined within wetland, inlets and outlets at limits of ROW.
111	PEM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	89, 90	Work Pad, Access Matting	3,179	None	0	12151	No	No	Large complex comprised mostly of emergent and scrub-shrub vegetation. Extends outside of ROW.
112	PSS1B, PFO1B	Floodflow Alteration	91	Work Pad, Access Matting	1,378	None	0	8536	No	No	
114	PEM/SS1E, PFO1C	Floodflow Alteration, Wildlife Habitat	92, 93	Access Matting	625	None	0	6600	Yes/ VP-114	No	PVP Identified within PFO portion of wetland. Wetland appears to be fed by drainage from neighboring residential properties to the east.
115	PFO1B, PEM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Wildlife Habitat	94, 95	Work Pad, Access Matting	2,302	None	0	12436	No	No	Wetland associated with large flooded complex outside of ROW.
117	PEM/SS1C, PEM/SS1E, PFO5H, PEM1G, PEM1E	Floodflow Alteration, Wildlife Habitat	96, 98	Work Pad, Access Matting	6,326	None	0	6531	No	SA-37/Intermittent/R4SB4 SA-38/Intermittent/R4SB3	Intermittent channel SA-38 flows NE to SW, over portion of access trail. Large flooded wetland complex extedns west out of ROW.
117A	PEM1E	Same as 117.	97	None	0	None	0	1051	No	SA-37/Intermittent/R4SB4	Wetland hydroliogcally connected to WA 117 via itnermittent stream channel SA-37.
117B	PFO1C, PSS1C	Same as 117.	99	Work Pad	1,163	None	0	5730	No	SA-38/Intermittent/R4SB3	Wetland hydrologically connected to WA 117 via intermittent stream channel SA-38.
120	PSS1B	Wetland provides no significant functions/values	100	Work Pad	396	None	0	0	No	No	Small isolated wetland within ROW.
123	PFO1C	Wetland provides no significant functions/values	101	None	0	None	0	542	No	No	Small isolated wetland along residential driveway shoulder.
124	PSS/EM1E	Floodflow Alteration, Wildlife Habitat	102	None	0	None	0	341	No	No	
125	PSS1B	Wetland provides no significant functions/values	103	None	0	None	0	437	No	No	Narrow isolated scrub-shrub wetland swale.
127	PSS1C	Groundwater Discharge	104	Access Matting	1,320	None	0	0	No	No	
128	PEM/SS1E, PEM1F, PEM1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	105, 106	Work Pad, Pull Pad, Access Matting, Guard Protection	43,219	Structure Installation/ Grading for stream SA-41 realignment	240	8813	No	SA-39/Intermittent/R4SB3/5 SA-40/Intermittent/R4SB3/5 SA-41/Intermittent/R4SB4	Several intermittent stream channels associated with large wetland complex that extends outside of ROW. Wetland located within Musquash Conservation Area.
128A	PFO1C, PSS/EM1C	Same as 128.	107	Work Pad	1,984	None	0	6039	No	SA-41/Intermittent/R4SB4	Wetland located along intermittent channel SA-41.

Merrimack Valley Reliability Project Impacted Wetlands in NH

WETLAND ID	COWARDIN CLASS	PRINCIPAL FUNCTION&VALUES	PHOTOS	Project Impacts					Vernal Pool Present? / ID	Associated Stream Channel? Name/Type/Cowardin Class	Other Comments
				Temporary		Permanent		Clearing (Sq Ft)			
				Type	Impact (Sq Ft)	Type	Impact (Sq Ft)				
132	PSS1C, PSS1E, PSS/EM1C, PSS/EM1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal.	108, 109	Acces Matting	1,528	None	0	3561	No	No	Wetland is hydrologically connected to 128 via culvert underneath High Range Road.
133	PFO1C, PEM1E, PSS1C	Floodflow Alteration	110	None	0	None	0	6509	No	No	
137	PEM1G, PSS1E, PSS/EM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	111, 112	Work Pad	2,904	None	0	11911	No	No	Large emergent wetland complex with interspersed braided/diffuse channels. Densely vegetated.
141	PFO1C	Wetland provides no significant functions/values	113	Work Pad	358	None	0	2723	No	No	
143	PSS1B	Wetland provides no significant functions/values	114	Work Pad	205	None	0	0	No	No	Narrow scrub-shrub swale within ROW.
144	PEM/SS1E, PFO5E, PSS1B, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	115, 116	Work Pad, Access Matting, Pull Pad	18,815	Structure Installation	25	5908	No	No	Large complex primarily comprised of dense emergent/scrub vegetation, extends north outside of ROW. Adjacent to Mammoth Road Substation.
146A	PEM1F, PEM/SS1E, PEM1E, PSS1C	Groundwater Recharge/Discharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	117, 118, 119	Work Pad, Access Matting	8,463	None	0	20589	No	No	Large srub-shrub/emergent complex extends west out of ROW, portions flooded.
147	PFO1C, PEM/SS1C	Groundwater Discharge	120, 121	Access Matting	2,638	None	0	3705	No	No	Wetland located along gradual slope, drains northeast to southwest.
149	PEM1H, PSS1B, PEM1E, PSS1C, PFO5G	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	122, 123	Work Pad	2,361	None	0	12212	No	None	Portions of wetland flooded. Hydrologically connected to WA 149A via culvert under old access path.
149A	PEM1E, PEM1G, PFO5G, PFO5F	Same as 149.	124	Work Pad, Pull Pad, Access Matting, Guard Protection	12,570	None	0	2662	No	None	Portions of wetland flooded. Hydrologically connected to WA 149 via culvert under old access path.
152	PEM1E, PFO1C	Floodflow Alteration, Sediment/Toxicant Retention	125	Work Pad	682	None	0	4138	No	No	
154	PSS1B	Wetland provides no significant functions/values.	126	Access Matting	499	None	0	0	No	No	Small isolated wetland within ROW.
156	PEM1E, PEM1C	Floodflow Alterataion, Sediment/Toxicant Retention.	127, 128	Work Pad, Access Matting	2,228	None	0	6653	No	No	Wetland located downslope of developed industrial property. Dense emergent and scrub-shrub vegetation exists.
160	PEM1E, PSS1C	Floodflow Alteration, Sediment/Toxicant Retention	129, 130	Access Matting	237	None	0	2551	No	No	Wetland abuts Rockingham Road (NH Route 28).
165	PFO1F, PFO1E, PUB2H, PSS/EM1G, PEM1H	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat.	131, 132	Pull Pad, Access Matting	19,099	None	0	44547	Yes/ VP-165	SA-43/Beaver Brook/Perennial/R2UB1	Beaver activity present, portions of wetland flooded.
166	PSS1B	Same as 167.	133	Pull Pad	802	None	0	0	No	No	Wetland located downslope of developed substation site (Scobie Substation). Appear to receive substation drianage.
167	PEM/SS1E	Floodflow Alteration, Sediment/Toxicant Retention	134	Pull Pad	7,756	None	0	0	No	No	Wetland located downslope of developed substation site (Scobie Substation). Appear to receive substation drianage.
			Overall Total Impacts Square Feet/Acres:		**385,896/8.86**		**4,428/.10**	**473,725/10.88**			

Attachment C

Representative Site Photographs

Representative Wetland Photographs

Photo 135: View northeast to OR2 at location of proposed permanent crossing. 04/21/2015.

Photo 136: View southeast toward WA 87A. The eastern edge of the wetland will be temporarily impacted by a construction work pad during the installation of proposed structure 213. 10/06/2014.

Attachment D

Natural Resource Agency Correspondence

■

NHNHB Correspondence

■

This correspondence has been redacted for confidential information, December 23, 2015

NHF&G Correspondence

■

This correspondence has been redacted for confidential information, December 23, 2015

USFWS Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-0324 November 24, 2015
Event Code: 05E1NE00-2016-E-00465
Project Name: Merrimack Valley Reliability Project

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

To Whom It May Concern:

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 feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. 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. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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. Under sections 7(a)(1) and 7(a)(2) 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 and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, 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 Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. 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:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Merrimack Valley Reliability Project

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
(603) 223-2541
http://www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-0324
Event Code: 05E1NE00-2016-E-00465

Project Type: TRANSMISSION LINE

Project Name: Merrimack Valley Reliability Project
Project Description: Eversource and National Grid have teamed up to implement the construction of a new transmission line between Londonderry, New Hampshire, and Tewksbury, Massachusetts. The Merrimack Valley Reliability Project will consist of installing a new 345-kilovolt (kV) overhead line along 24.6 miles of an existing power line corridor that runs between Londonderry, New Hampshire, and Tewksbury, Massachusetts.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Essex, MA | Middlesex, MA | Hillsborough, NH | Rockingham, NH

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Northern Long-eared Bat Acoustic Survey Report

Merrimack Valley Reliability Project
345 kV Transmission Line Project

REFERENCE NUMBER

VHB: 12650.00
USACE: DENAE-R-2015-875

PREPARED FOR

New England Power Company
d/b/a National Grid
40 Sylvan Road
Waltham, Massachusetts 02451
781.907.3648

and

Public Service Company of New Hampshire
d/b/a Eversource Energy
13 Legends Drive
Hooksett, New Hampshire 03106
603.634.2906

PREPARED BY

2 Washington Square
Union Station, Suite 219
Worcester, MA 01604
508.752.1001

OCTOBER 28, 2015

This report has been redacted for confidential information, December 23, 2015

Attachment G

USACE Functions and Values Forms

■

US Army Corps of Engineers
New England District

Wetland Function-Value Evaluation Form

Total area of wetland 0.34 Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Roadway, ROW, Residential Distance to nearest roadway or other development +/- 100 feet

Dominant wetland systems present PSS Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Beginning

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 87A
Latitude 42.820560 Longitude -71.391251
Prepared by: LGJ Date 12/11/2014
Wetland Impact:
Type See Table Area See Table

Evaluation based on:
Office X Field X
Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		2, 4, 5, 15		Topography and soils associated with wetland favor groundwater recharge; not a discharge wetland. Wetland has the capacity to retain water, evidence of variable water levels observed.
Floodflow Alteration	X		3, 5, 6, 7, 8, 9, 18	X	Wetland located in flat area with flood storage potential, evidence of variable water levels observed.
Fish and Shellfish Habitat		X	------		Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention	X		1, 4, 6, 9		Wetland is located adjacent to developed residential parcels, potential for excess sediment present. Wetland contains dense vegetation and has some capacity for water storage.
Nutrient Removal	X		3, 4, 5, 7, 8, 9		Wetland contains dense woody vegetation and slowly drained soils; opportunity for nutrient removal exists.
Production Export		X	1, 7		Wetland function low in producing food for organisms.
Sediment/Shoreline Stabilization		X	------		Wetland is not located along the banks or shoreline of a waterbody.
Wildlife Habitat	X		7, 8, 13, 18	X	Wetland contains vernal pool habitat, dense woody vegetation and potential food sources.
Recreation		X	------		Wetland does not provide recreational opportunities.
Educational/Scientific Value		X	------		Wetland is not effective as a site for outdoor learning or research.
Uniqueness/Heritage		X	------		Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X	------		Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat					
Other					

Notes: Wetland contains delineated vernal pool.

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-30a.

Attachment H

Vernal Pool Summary Table & Photographs

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MERRIMACK VALLEY RELIABILITY PROJECT - VERNAL POOL SUMMARY TABLE

ID	Associated Wetland	Town	Plan Sheet #	Landscape Setting	Parent Material	Aquatic Resource Type	Pool Canopy Cover %	Predominate Substrate	Approx. Size (LxWxD) Feet	Hydrology		Water Quality	Surrounding Land Use		Species Present*				Clearing Impacts (Square Feet)		Photos	Other Comments
										Est. Hydroperiod	Rhydrological Regime		Within 100'	Within 750'	Spotted Salamander	Blue Spotted Salamander	Wood Frog	Other	Direct	100' Buffer		
VP-38	0	Pelham	35	Wetland Complex	Dense Till	Shrub Wetland	0	Organic Matter	250x120x4	Ear Nov- Late Dec	Permanent	Clear Little Color	25 % Forestland, 75% ROW	75% Forestland, 25% ROW	em (>200)		em (>50)	Fairy Shrimp (c), Caddisfly (f), Spotted Turtle	0	1,392**	1, 2	Deep Organic bottom
VP-39	39	Pelham	35	Wetland Complex	Dense Till	Forested Wetland	25	Organic Matter	100x70x3	Ear Mar - Ear Jul	Semi-permanent	Clear Little Color	85& Forestland, 15% ROW	75% Forestland, 25% ROW	em (5)		em (7)	Caddisfly (f)	0		3, 4	Old road close, constructed culverted outlet
VP-40	40	Pelham	36	Wetland Complex	Dense Till	Herbaceous Wetland	10	Organic Matter	100x60x4	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	20% Forestland, 10& Developed, 70% ROW	30% Forestland, 20% Developed, 50% ROW	em (3)			Spring Peeper (a) Dead	279	1,095	5	Appears to be located in a previously excavated area/old borrow pit
VP-43	43	Pelham	38	Upland Depression	Loose Till	Shrub Wetland	0	Mineral Soil	30x20	Ear Mar - Ear Jul	Seasonal	Tannic	100% ROW	30% Forestland, 70% ROW	No Species Present				0	0	N/A	
VP-51	51	Pelham	46	Wetland/Pool Complex	Dense Till	Shrub Wetland	0	Organic Matter	130x100x3	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	5% Forestland, 95% ROW	30% Forestland, 70% ROW	em(15)		em(30), t (>1,000)		0	1,004	6, 7	
VP-51A	51	Pelham	46	Wetland/Pool Complex	Dense Till	Shrub Wetland	0	Organic Matter	100x70x18	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	10% Forestland, 90% ROW	30% Forestland, 70% ROW	em(1)		em(50), t(>1,000)		0	0	8	
VP-56	56	Pelham	50	Upland Depression	Loose Till	Shrub Wetland	3	Mineral Soil	50x80x3	Ear Mar - Ear Jul	Seasonal	Clear Little Color	100% ROW	15% Forestland, 5% Developed, 80% ROW			em (10), t (>1,000)		8	174	9, 10	
VP-63	63	Windham	56	Upland Depression	Loose Till	Open Water	5	Mineral Soil	15x20x3	Ear Jul - Ear Sept	Seasonal	Clear Little Color	15% Forested, 15% Developed, 65% ROW, 5% Roadway	10% Forestland, 15% Developed, 65% ROW, 10% Road	em(5)		t(100), a(1)		0	1,008	11, 12	
VP-87A	87A	Hudson	70	Wetland Complex	Alluvium	Shrub Wetland	0	Organic Matter	100x60x2	Ear Jul - Ear Sept	Seasonal	Clear Little Color	10% Forested, 90% ROW	15% Forestland, 5% Developed, 75% ROW, 5% Road			em (>50), t (>500)	Caddisfly (c), Diving Beetle, Adult Newt	0	14,828	13	Constricted culverted outlet
VP-88	88	Hudson	70	Wetland Complex	Loose Till	Forested Wetland	80	Organic Matter	200x100x2	Ear Jul - Ear Sept	Seasonal	Tannic	66% Forested, 33% ROW	66% Forestland, 33% ROW	em (>30)	em(>50)	em(>40)		15,227	19,400	14, 15	Completely dries in fall
VP-90	90	Londonderry	71	Upland Depression	Gacial Fluvial	Open Water	5	Mineral Soil	150x80x3	Ear Nov- Late Dec	Permanent	Clear Little Color	40% Forested, 40% ROW, 20% Pond	25% Forestland, 50% ROW, 25% Other	em(21)		em(1)	Crayfish, Bullfrog	475	12,814	16	Part of sand pit complex
VP-92	92	Londonderry	72	Wetland Complex	Loose Till	Shrub Wetland	5	Organic Matter	500x60x3	Intermittently Exp	Permanent	High Algae Content	50% Forestland, 25% Developed, 25% ROW	40% Forestland, 10% Developed, 50% ROW	em(3)			Caddisfly (f)	2,759	18,855	17	Ponded, constricted culverted outlet
VP-98	98	Londonderry	74	Wetland/Pool Complex	Loose Till	Forested Wetland	66	Mineral Soil	80x100x3	Ear Jul - Ear Sept	Seasonal	Tannic	50% Forestland, 50% ROW	50% Forestland, 50% ROW			em(21)	Caddisfly (c), oligochites, small beetle	3,886		18, 19	Flooded forested wetland
VP-101	101	Londonderry	74	Wetland/Pool Complex	Loose Till	Forested Wetland	66	Mineral Soil	100x200x3	Ear Jul - Ear Sept	Seasonal	Clear Little Color	70% Forestland, 30% ROW	50% Forestland, 50% ROW	em(20)	em(2)	em(25), t(>100)	Caddisfly (c), small oligochites, small beetle	8,465	56,951**	20	Flooded forested wetland
VP-102	102	Londonderry	74	Upland Depression, Wetland/Pool Complex	Loose Till	Forested Wetland	100	Organic Matter	35x15x4	Ear Sep - Ear Nov	Seasonal	Clear Little Color			No Species Observed				266		21	Small borrow pit/quarry
VP-114	114	Londonderry	82	Upland Depression, Wetland Complex	Loose Till	Forested Wetland	75	Organic Matter	30x10x2	Ear Jul - Ear Sept	Seasonal	Clear Little Color	15% Forestland, 10& Shrubland, 10% Developed, 65% ROW	20% Forestland, 5% Developed, 75% ROW	em(1)			Caddisfly (f)	423	9,574	22, 23	Small borrow pit/quarry
VP-165	165	Londonderry	102	Wetland Complex	Loose Till	Forested Wetland	20	Organic Matter	175x70x4	Ear Sep - Ear Nov	Seasonal	Clear Little Color	90% Forestland, 20% Shrubland, 10% ROW	20% Forestland, 65% ROW, 15% Substation	em(31)		em(12), a(1)	Caddisfly (f), Spotted Turtle (2)	0	0	24, 25	Flooded forested wetland
																		Totals:	**31,788 / 0.7 ac**	**137,094 / 3.2 ac**		

* **EM = Egg Mass; A = Adult; C = Common; F = Few**

** **Vernal Pool 100-foot Buffers Overlap**

Attachment I

Proposed Mitigation Calculations and Preliminary Site Plan of In-Kind Mitigation

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MVRP Section 404 Wetland Mitigation Estimates - FINAL- June 19, 2015 revised November 23, 2015

Total New Hampshire Wetland Impacts (acres)

Town - Company	Permanent Wetland /Stream Impacts (ac)	Temporary Wetland /Stream Impacts (ac)	Secondary Wetland Impacts (ac)	Vernal Pool Secondary Impacts (ac)	Vernal Pool Buffer Secondary Impacts (ac)	Riparian Buffer Secondary Impacts (ac)	Total Impacts (ac)	Mitigated Impacts (ac)
Pelham-Grid	0.086	3.674	0.416	0.007	0.084	0.143	4.409	0.369
Windham - Grid	0.006	0.161	0.042	0.000	0.023	0.183	0.415	0.051
Hudson - Grid	0.000	0.079	0.005	0.000	0.000	0.038	0.122	0.010
Hudson - PSNH	0.003	0.588	2.440	0.350	0.786	2.092	6.259	0.941
Londonderry - PSNH	0.007	4.356	7.243	0.374	2.254	2.066	16.300	2.074
Total	**0.102**	**8.859**	**10.145**	**0.730**	**3.147**	**4.522**	**27.505**	**3.445**

Mitigation Burden by Mitigation Type

	Impacts		Mitigation Type				
Town - Company	Total Impacts (ac)	Mitigated Impacts (ac)	Restoration 2:1 (acres)	Creation 2:1 (acres)	Enhancement 3:1 (acres)	Preservation 15:1 (acres)	In-Lieu Fee ($)
Pelham-Grid	4.41	0.37	0.74	0.74	1.11	5.53	$77,502.63
Windham - Grid	0.41	0.05	0.10	0.10	0.15	0.76	$10,721.48
Hudson - Grid	0.12	0.01	0.02	0.02	0.03	0.16	$2,177.12
Hudson - PSNH	6.26	0.94	1.88	1.88	2.82	14.11	$197,813.93
Londonderry - PSNH	16.30	2.07	4.15	4.15	6.22	31.11	$436,162.87
National Grid Total	**4.95**	**0.43**	**0.86**	**0.86**	**1.29**	**6.45**	**$90,401.23**
Eversource Total	**22.56**	**3.01**	**6.03**	**6.03**	**9.04**	**45.22**	**$633,976.80**
Total	**27.50**	**3.44**	**6.89**	**6.89**	**10.33**	**51.67**	**$724,378.02**

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Mitigation Required	5.53 acres
Uplands	4.62 acres
Wetlands	1.32 acres
Total Potential Mitigation	5.94 acres

PELHAM

Peabody Town Forest

Peabody Town Forest Addition

Map 30-7-8 Town of Pelham

Map 30-7-9 Town of Pelham

LITTLE ISLAND POND PRIME WETLAND

Map 30-11-103 Town of Pelham

Potential Subdivision Line

Map 30-7-4 Town of Pelham

Peabody Town Forest

Map 30-7-11 NEP

Map 30-11-100 Private

1 2 3 4 5 6

112 113 114 115 116 117

Line N-214

(Existing Line Y-151)

New Line 3124

Peabody Town Forest Addition

Line O-215

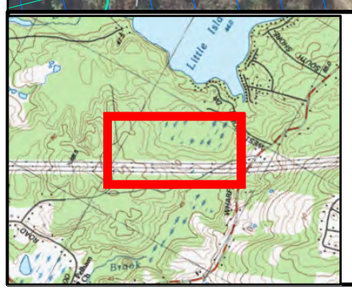
Relocated Line Y-151

Peabody Town Forest

Map 29-7-10 Private

Map 30-7-12 Town of Pelham

Map 30-11-102 Private



- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Existing Transmission Line
- Existing Line to be Removed
- Proposed Transmission Line
- Surveyed ROW Boundary
- Parcel Boundary
- Tax Map 30-7-11
- Proposed Subdivision Line
- Public Water Supply Well
- Contaminated Site
- Wellhead Protection Area
- NHDES Prime Wetland
- NH NHB Occurence Area
- FEMA 100-yr Floodplain
- Conservation Area
- Photograph Location
- Wetland Edge
- Wetland Resource Area

Not present within map extent:
-Above Ground Storage Tanks
-Automobile Salvage Yards
-Groundwater Classification Site
-Outstanding Resource Waters
-Hazardous Waste Generators
-Source Water Protection Area
-Underground Storage Tank

1 Inch = 200 Feet

0 100 200 400

Feet

Merrimack Valley Reliability Project

Potential Mitigation Site
Pelham, NH

Source:
NGRID,Black & Veatch,VHB,
Beals & Thomas,Eversource,NHDES, NHGRANIT

Date: 12/28/2015

nationalgrid

EVERSOURCE ENERGY