

E194 & U181 Structure Replacement Project  
Portsmouth and Newington, New Hampshire

## **ALTERATION OF TERRAIN PERMIT**

Eversource Energy  
13 Legends Drive  
Hooksett, New Hampshire

May 2023

**Tighe&Bond**

14-5034-200-01  
May 11, 2023

Ridgley Mauck, P.E.  
State of New Hampshire  
Department of Environmental Services  
Alteration of Terrain Bureau  
29 Hazen Drive, PO Box 95  
Concord, New Hampshire 03302-0095

Re: **Alteration of Terrain Permit Application  
E194 & U181 Structure Replacement Project  
Portsmouth and Newington, New Hampshire**

Dear Mr. Mauck:

On behalf of Eversource Energy Service Company, we are pleased to submit the following information relative to an Alteration of Terrain Application for the above referenced project:

- One (1) check made payable to Treasurer, State of New Hampshire in the amount of \$4,375.00;
- Alteration of Terrain Application and Checklist; and
- One (1) set of Site Plans dated March 23, 2023.

The proposed project is located on the Eversource Energy (Eversource) Lines E194 and U181 Right-of-Way (ROW) in Portsmouth and Newington, New Hampshire. The transmission line runs from the Newington Substation in Newington to the Ocean Road Substation in Greenland. The ROW and access roads are surrounded by residential, industrial, and commercial properties, forest, and wetland areas. The proposed project will consist of the replacement of forty-five (45) structures and associated static wire work at nine (9) structures on the E194 and U181 Lines. These old, wooden utility structures are to be replaced with new, steel structures due to their age and condition. In addition to the structure replacements, existing upland access roads and areas for the work pads will need to be upgraded or created. Wetlands and other sensitive areas are to be protected with timber matting along proposed access and surrounding the structures to be replaced.

Impacts to the existing terrain will result from the creation of approximately 100-foot by 100-foot work pads and 16-foot-wide access roads, totaling 206,545 square feet (SF) of disturbance. We trust the enclosed information addresses the requirements for the Alteration of Terrain application. If you have any questions or require any additional information, please feel free to contact us at (413) 875-1305 or at [KLWilkins@tighebond.com](mailto:KLWilkins@tighebond.com).

Very truly yours,

**TIGHE & BOND, INC.**



Katherine Wilkins  
Project Manager

Enclosures  
Copy: Ashley Friend, Eversource Energy

**Alteration of Terrain Permit Application Form and Checklist**

**Fee Check (File Copy)**

**USGS Topographic Map**

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# ALTERATION OF TERRAIN PERMIT APPLICATION



Water Division/ Alteration of Terrain Bureau/ Land Resources Management  
Check the Status of your Application: [www.des.nh.gov/onestop](http://www.des.nh.gov/onestop)

RSA/ Rule: RSA 485-A:17, Env-Wq 1500

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

**1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)**

Applicant Name: Eversource Energy Service Company		Contact Name: Ashley Friend	
Email: Ashley.Friend@eversource.com		Daytime Telephone: (603) 634-2992	
Mailing Address: 13 Legends Drive			
Town/City: Hooksett		State: NH	Zip Code: 03106

**2. APPLICANT'S AGENT INFORMATION** If none, check here:

Business Name: Tighe & Bond, Inc.		Contact Name: Katy Wilkins	
Email: KLWilkins@tighebond.com		Daytime Telephone: (413) 875-1305	
Address: 53 Southampton Road			
Town/City: Westfield		State: MA	Zip Code: 01085

**3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)**

Applicant Name:		Contact Name:	
Email:		Daytime Telephone:	
Mailing Address:			
Town/City:		State:	Zip Code:

**4. PROPERTY OWNER'S AGENT INFORMATION** If none, check here:

Business Name:		Contact Name:	
Email:		Daytime Telephone:	
Address:			
Town/City:		State:	Zip Code:

**5. CONSULTANT INFORMATION** If none, check here:

Engineering Firm: Tighe & Bond, Inc.		Contact Name: Katy Wilkins	
Email: KLWilkins@tighebond.com		Daytime Telephone: (413) 875-1305	
Address: 53 Southampton Road			
Town/City: Westfield		State: MA	Zip Code: 01085



**6. PROJECT TYPE**

Excavation Only  
  Residential  
  Commercial  
  Golf Course  
  School  
  Municipal  
 Agricultural  
  Land Conversion  
  Other: Utility

**7. PROJECT LOCATION INFORMATION**

Project Name: E194 & U181 Structure Replacement Project  
 Street/Road Address: Existing Transmission Line Rights-of-Way  
 Town/City: Portsmouth and Newington      County: Rockingham  
 Tax Map: N/A      Block: N/A      Lot Number: N/A      Unit: N/A  
 Location Coordinates: 43.096375 -70.789898       Latitude/Longitude       UTM       State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		
2. Man-made pond created by impounding a stream or wetland Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		
3. Unlined pond dug into the water table Purpose:	<input type="checkbox"/> Yes	<input type="checkbox"/> Withdrawal	<input type="checkbox"/> Discharge
	<input checked="" type="checkbox"/> No		

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen?  No     Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A Class A surface water or Outstanding Resource Water?  No     Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A lake or pond not covered previously?  No     Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond

Is the project a High Load area?     Yes     No  
 If yes, specify the type of high load land use or activity: \_\_\_\_\_

Is the project within a Water Supply Intake Protection Area (WSIPA)?     Yes     No  
 Is the project within a Groundwater Protection Area (GPA)?     Yes     No  
 Will the well setbacks identified in Env-Wq 1508.02 be met?     Yes     No

Note: Guidance document titled "[Using NHDES's OneStop WebGIS to Locate Protection Areas](#)" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain?     Yes     No  
 If yes:    Cut volume: 1,280 cubic feet within the 100-year floodplain  
           Fill volume: 1,280 cubic feet within the 100-year floodplain

Project IS within ¼ mile of a designated river      Name of River:  
 Project is NOT within ¼ mile of a designated river

Project IS within a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(I) if applicable  
 Project is NOT within a Coastal/Great Bay Region community

**8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")**

**9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT**

Some work may begin in areas that are not under AoT or other regulatory agency jurisdiction. However, Eversource will not conduct work in any jurisdictional areas that require permitting until all permits have been obtained.

**10. ADDITIONAL REQUIRED INFORMATION**

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)<sup>1</sup>:    /    /   .  
**(Attach proof of delivery)**

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)<sup>2</sup>:    /    /   .  
**(Attach proof of delivery)**

C. Type of plan required:  Land Conversion  Detailed Development  Excavation, Grading & Reclamation  Steep Slope

D. Additional plans required:  Stormwater Drainage & Hydrologic Soil Groups  Source Control  Chloride Management

E. Total area of disturbance: 206,545 square feet

F. Additional impervious cover as a result of the project: 0 square feet (use the “-” symbol to indicate a net reduction in impervious coverage).  
 Total final impervious cover: 0 square feet

G. Total undisturbed cover: 0 square feet

H. Number of lots proposed: 0

I. Total length of roadway: 0 linear feet

J. Name(s) of receiving water(s):

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
2. Wetlands Permit	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input checked="" type="checkbox"/>	Permit number:
3. Shoreland Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
4. UIC Registration	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Registration date:
5. Large/Small Community Well Approval	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Approval letter date:
6. Large Groundwater Withdrawal Permit	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/>	Permit number:
7. Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: Refer to Appendix C

M. Using NHDES’s Web GIS OneStop program ([www2.des.state.nh.us/gis/onestop/](http://www2.des.state.nh.us/gis/onestop/)), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter “N/A.”  
 \_\_\_\_\_

N. Did the applicant/applicant’s agent have a pre-application meeting with AOT staff?  Yes  No  
 If yes, name of staff member: \_\_\_\_\_

O. Will blasting of bedrock be required?  Yes  No If yes, estimated quantity of blast rock: \_\_\_\_\_ cubic yards  
 If yes, standard blasting BMP notes must be placed on the plans, available at:  
<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf>  
**NOTE:** If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

<sup>1</sup> Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

<sup>2</sup> Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

**11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)****LOOSE:**

- Signed application form: [des.nh.gov/organization/divisions/water/aot/index.htm](http://des.nh.gov/organization/divisions/water/aot/index.htm) (with attached proof(s) of delivery)
- Check for the application fee: [des.nh.gov/organization/divisions/water/aot/fees.htm](http://des.nh.gov/organization/divisions/water/aot/fees.htm)
- Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

**BIND IN A REPORT IN THE FOLLOWING ORDER:**

- Copy of the signed application form & application checklist ([des.nh.gov/organization/divisions/water/aot/index.htm](http://des.nh.gov/organization/divisions/water/aot/index.htm))
- Copy of the check
- Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- Web GIS printout with the "Surface Water Impairments" layer turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- Web GIS printouts with the AOT screening layers turned on - <http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx>
- NHB letter using DataCheck Tool – [www.nhdf.org/about-forests-and-lands/bureaus/natural-heritage-bureau/](http://www.nhdf.org/about-forests-and-lands/bureaus/natural-heritage-bureau/)
- The Web Soil Survey Map with project's watershed outlined – [websoilsurvey.nrcs.usda.gov](http://websoilsurvey.nrcs.usda.gov)
- Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- Photographs representative of the site
- N/A  Groundwater Recharge Volume calculations (one worksheet for each permit application): See attached waiver request [des.nh.gov/organization/divisions/water/aot/documents/bmp\\_worksh.xls](http://des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls)
- N/A  BMP worksheets (one worksheet for each treatment system): See attached waiver request [des.nh.gov/organization/divisions/water/aot/documents/bmp\\_worksh.xls](http://des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls)
- N/A  Drainage analysis, stamped by a professional engineer (see Application Checklist for details) See attached waiver request
- N/A  Riprap apron or other energy dissipation or stability calculations
- N/A  Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*. See attached waiver request
- N/A  Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)] See attached waiver request
- N/A  Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): ([http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw\\_discharge](http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge))
- N/A  Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- N/A  Source control plan

**PLANS:**

- One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- N/A  Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details) See attached waiver request
- N/A  Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details) See attached waiver request

**100-YEAR FLOODPLAIN REPORT:**

- All information required in Env-Wq 1503.09, submitted as a separate report.

The access work within the 100-year floodplain will be constructed to maintain the existing grade to result in no change in storage volume. Copies of the FEMA FIRM are included as an attachment.

**ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE**

- N/A  See Checklist for Details

- REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.

**12. REQUIRED SIGNATURES**

AF By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

APPLICANT

APPLICANT'S AGENT:

Signature: Katherine Wilkins

Date: 5/10/2023

Name (print or type): Katherine Wilkins

Title: Project Manager

PROPERTY OWNER

PROPERTY OWNER'S AGENT:

Signature: Ashley Friend

Date: 5/11/2023

Name (print or type): Ashley Friend

Title: Licensing and Permitting Specialist

# ATTACHMENT A: ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

## DESIGN PLANS

- Plans printed on 34 - 36" by 22 - 24" white paper
- N/A  PE stamp Engineered design is limited to the electrical infrastructure and can be provided upon request
- Wetland delineation
- Temporary erosion control measures
- N/A  Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.  
See attached waiver request
- Pre-existing 2-foot contours
- N/A  Proposed 2-foot contours
- N/A  Drainage easements protecting the drainage/treatment structures
- Compliance with the Wetlands Bureau, RSA 482- A <http://des.nh.gov/organization/divisions/water/wetlands/index.htm>. Note that artificial detention in wetlands is not allowed.
- N/A  Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. <http://des.nh.gov/organization/divisions/water/wetlands/cspa>
- N/A  Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- N/A  Check to see if any proposed ponds need state Dam permits.  
<http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf>

## DETAILS

- N/A  Typical roadway x-section Roadways are not proposed
- N/A  Detention basin with inverts noted on the outlet structure Detention basins are not proposed
- N/A  Stone berm level spreader
- N/A  Outlet protection – riprap aprons
- A general installation detail for an erosion control blanket
- Silt fences or mulch berm
- N/A  Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- Hay bale barriers
- Stone check dams
- Gravel construction exit
- N/A  Temporary sediment trap
- N/A  The treatment BMP's proposed
- N/A  Any innovative BMP's proposed



**CONSTRUCTION SEQUENCE/EROSION CONTROL**

- Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.
- Note that perimeter controls shall be installed prior to earth moving operations.
- Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.
- Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).
- Note that all ditches and swales shall be stabilized prior to directing runoff to them.
- Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.
- Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade
- Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.
- Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

- Note the definition of the word “stable”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

- Note the limit of time an area may be exposed  
Example note: All areas shall be stabilized within 45 days of initial disturbance.

- Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)

- Provide winter construction notes that meet or exceed our standards.

**Standard Winter Notes:**

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

- N/A  Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

**DRAINAGE ANALYSES** N/A - See attached waiver request

Please double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

- PE stamp
- Rainfall amount obtained from the Northeast Regional Climate Center- <http://precip.eas.cornell.edu/>. Include extreme precipitation table as obtained from the above referenced website.
- Drainage analyses, in the following order:
- Pre-development analysis: Drainage diagram.
  - Pre-development analysis: Area Listing and Soil Listing.
  - Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
  - Pre-development analysis: Full summary of the 10-year storm.
  - Post-development analysis: Drainage diagram.
  - Post-development analysis: Area Listing and Soil Listing.
  - Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
  - Post-development analysis: Full summary of the 10-year storm.
- Review the Area Listing and Soil Listing reports
- Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
  - There is the same or less HSG A soil area after development (check for each HSG).
  - There is the same or less "woods" cover in the post-development.
  - Undeveloped land was assumed to be in "good" condition.
  - The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

- Check the storage input used to model the ponds.
- Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.
- Check the outlet structure proposed and make sure it matches that modeled.
- Check to see if the total areas in the pre and post analyses are same.
- Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

**PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS** N/A - See attached waiver request

- Plans printed on 34 - 36" by 22 - 24" on white paper.
- Submit these plans separate from the soil plans.
- A north arrow.
- A scale.
- Labeled subcatchments, reaches and ponds.
- Tc lines.
- A clear delineation of the subcatchment boundaries.
- Roadway station numbers.
- Culverts and other conveyance structures.

**PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS** N/A - See attached waiver request

- 11" × 17" sheets suitable, as long as it is readable.
- Submit these plans separate from the drainage area plans.
- A north arrow.
- A scale.
- Name of the soil scientist who performed the survey and date the soil survey took place.
- 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- Delineation of the soil boundaries and wetland boundaries.
- Delineation of the subcatchment boundaries.
- Soil series symbols (e.g., 26).
- A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).
- The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

**N/A Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:**

- Drainage report is not needed if site does not have off-site flow.
- 5 foot contours allowed rather than 2 foot.
- No PE stamp needed on the plans.
- Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- Add reclamation notes.

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at: <http://des.nh.gov/organization/divisions/water/aot/categories/publications>.

**ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE**

- N/A**  If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- N/A**  If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.
- N/A**  If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.
- If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(I) if applicable.

**Tighe & Bond, Inc.**  
53 Southampton Road  
Westfield, MA 01085

This is a Deluxe eCheck. The PAY TO THE ORDER OF line designates the Payee. For questions call Deluxe Payment Exchange customer support at 877-373-6964. Ref: 124E-406

**6474**

Date 03/09/2023  
Void after 90 days

PAY TO THE ORDER OF Treasurer, State of New Hampshire

**\$ 4,375.00**

Four thousand, three hundred seventy-five and 00/100

Dollars

TD Bank, NA

Memo \_\_\_\_\_



Verify check at <https://echecks.com/verify>

**FILE COPY**

Account numbers are concealed for your security

**FILE COPY**

## Check Details

**Check issued:** 03/09/2023

**Check number:** 6474

**From:** Tighe & Bond, Inc.

**Amount:** \$4,375.00

**Payable to:** Treasurer, State of New Hampshire

**Delivered to:** jnovotny@tighebond.com

**Documents:** Yes - see Remittance below

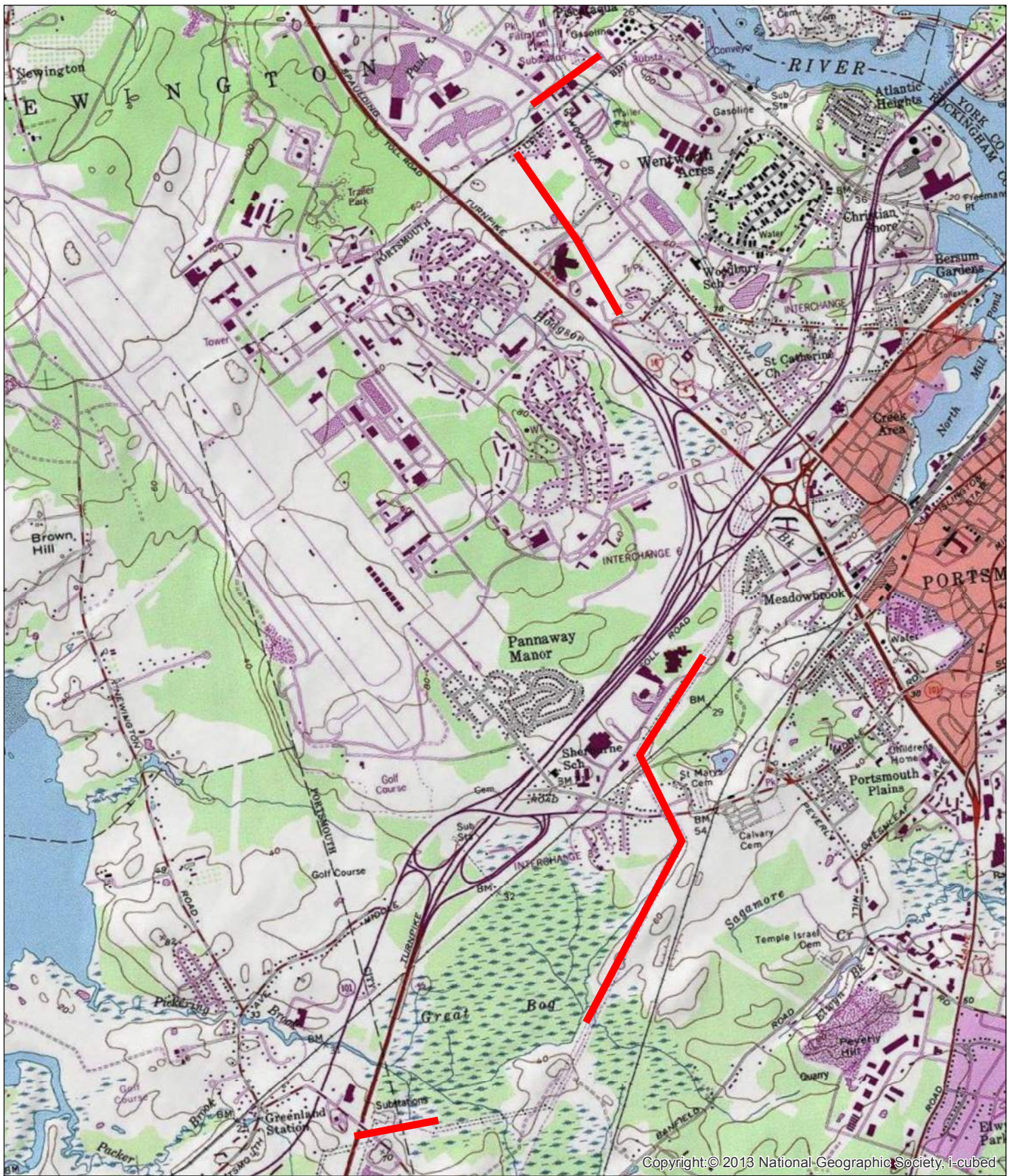
**Message from sender:** Hi, attached is your Tighe & Bond electronic check. Any questions please email AP@tighebond.com.

## Notes

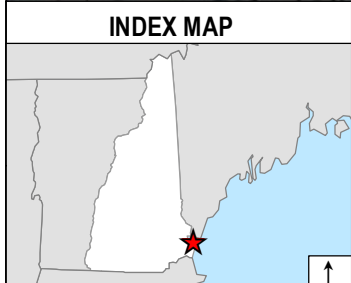
## Activity

ACTIVITY TYPE	TIME	DATE
Tracy Houle issued check 6474	12:57 PM EST	03/09/2023
Check 6474 file copy printed by Julia Novotny	08:16 AM EST	03/10/2023





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**Legend**

█ Project Area

1:30,000  
1 inch = 2,500 feet

0 1,250 2,500 Feet

N

**EVERSOURCE**

Figure 1 - Site Location  
Line E194 and U181  
Structure Replacement Project  
Portsmouth, New Hampshire

March 2023

**Tighe & Bond**



# **Section 1**

## **Project Background and Purpose**

Eversource Energy has determined that 45 wooden utility structures on the E194 and U181 Lines in Portsmouth and Newington need to be replaced with steel structures due to their overall age and condition. These include Structures 7, 13-16, 19, 37-41, 43-45, 48-54, 65.5, and 66 on the U181 and Structures 4, 5, 12-14, 19, 41-53, 65.5, and 66 on the E194. Static wire work will be conducted at STRs 65-67 on the U181 and STRs 7 and 65-67 on the E194. The proposed structure installations are required to maintain the safety and reliability of the existing transmission system. All practicable alternatives to avoid or minimize impacts from this work have been assessed and incorporated into the project design.

As part of the work, existing access roads will be regraded and, where needed, new access roads and work pads will be created to facilitate the structure replacements. The gravel access roads and work pads will only be completed within upland areas. Wetland portions of the access roads and work pads will be protected with timber matting, as will some uplands where the work is proposed along sensitive areas. Alteration of Terrain jurisdictional areas exclude areas that will be matted, and total 206,545 square feet (4.7 acres).

The following narrative describes existing conditions and proposed activities within these areas. Representative photographs of the project area are found in Appendix E and project plans are attached as Appendix G.

---

## Section 2 Existing Conditions

### 2.1 Project Setting

The E194 and U181 transmission lines originate at the Newington Substation off Gosling Road in Newington and run southwest of the Piscataqua River. The lines then extend southeast, parallel with Route 4 before turning southwest again, parallel with Interstate 95. The lines continue southwest through the Great Bog in Portsmouth before turning west and terminating at the Ocean Road Substation in Greenland. The topography is generally flat with the exception of portions of Right-of-Way (ROW) through forested and wetland areas. The landscape surrounding the ROW is mostly commercial, industrial, and residential, with some large portions of forest and wetland areas closer to the Greenland town line.

### 2.2 Surface Waters and Soils

Surface waters along the E194 and U181 ROW include an unnamed brook to the Piscataqua River in Newington adjacent to Structures 5 and 7 on the E194 and Structure 7 on the U181, and a tributary to Pickering Brook, which flows through Great Bog in Portsmouth adjacent to Structures 49 on both the E194 and U181. This tributary will be spanned with timber matting during work at these structures.

Soils in the project area mapped by the Natural Resources Conservation Service (NRCS, Appendix D) are predominantly Udorthents and Urban Land, as well as Pennichuck channery very fine sandy loam (Hydric Soil Group (HSG) B) and Maybid silt loam (HSG D) soils. Less predominantly present within the project bounds are Chatfield-Hollis-Canton complex soils (HSG B/C/D), Scitico silt loam (HSG C), Squamscott fine sandy loam (HSG C), and Urban Land-Canton complex soils. Some smaller areas within the southern portion of the ROW were classified mainly as sandy/sandy-skeletal outwash soils (Pipestone and Hoosic series, HSG B/A), and sandy/loamy over silt/clay (Eldridge series, HSG C). HSG classifications are based on *Ksat Values for New Hampshire Soils* (SSSNNE Special Publication No. 5, 2009).

### 2.3 Groundwater Protection Areas and Water Supply Intake Areas

A portion of the proposed structure replacements are within wellhead protection areas and mapped Groundwater Protection Areas (GPA) and Water Supply Intake Protection Areas (WSIPA) due to the proximity of work to multiple public water supply wells in Portsmouth. The portion of the ROW within these protection areas is located between Borthwick Avenue and Greenland Road. The work in this area will meet the required setbacks from these public well locations as set forth in Env-Wq 1508.02. Pertinent GIS screening layers depicting these protection areas and well locations relative to the project area are provided in Attachment B.

## 2.4 Pickering Brook and FEMA 100-Year Floodplain

### 2.4.1 Pickering Brook

Structure replacement work at Structures 49 on both the E194 and U181 is within and adjacent to a portion of Pickering Brook in Portsmouth. Timber matting will be utilized to span the width of the stream to minimize impacts to the bank and streambed. The existing structures in these areas are partially within the stream, and the proposed replacement structures will be installed further away from the stream.

#### 2.4.1.1 FEMA 100-Year Floodplain

According to the Federal Emergency Management Agency (FEMA), a portion of the proposed static line and pole relocation work is within the 100-year floodplain (Zone AE, Base Flood Elevation = 26 feet) associated with Pickering Brook. The work pads for Structures 65, 65.5, 66, and 67 on both the E194 and U181 (eight structures total), are within a floodplain wetland adjacent to Pickering Brook.

The 100-year floodplain is marked on all construction plans provided in Appendix G. FEMA FIRMettes of the project area are also provided in Appendix F. Temporary timber mats will be used in the floodplain and no net fill will result from the static wire work and pole relocation activities. As such, no flood storage loss will result from the proposed work.

## 2.5 Coastal/Great Bay Region Community

The proposed work is within two Coastal/Great Bay Region communities and the proposed infrastructure has an anticipated design life that surpasses 2050. According to the "2014 Science and Technical Advisory Panel Report, Sea Level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends", infrastructure with a design period surpassing 2050 should be designed to withstand potential flooding resulting from climate change.

The proposed utility structure replacements are meant to address age and overall condition. Existing wooden structures will be replaced with more durable steel structures that are capable of withstanding extreme precipitation and flooding. As these structures are not located near the shoreline, there has not been specific design for this project to address coastal flooding. In general, the utility infrastructure is designed in consideration of environmental weathering. Overall grid modernization and upgrades to the infrastructure will help with system resiliency as it pertains to the effects of climate change. Eversource will continue to address more severe environmental conditions as they arise in future years and integrate the necessary infrastructural adaptations to allow for reliable public utility transmission and distribution.

## 2.6 Rare, Threatened, and Endangered (RTE) Species

A New Hampshire Natural Heritage Bureau (NHB) DataCheck review was conducted on January 26, 2023 and resulted in the following species identified as being on or near the project area:

### Plant Species

- Bulbous bitter-cress (*Cardamine bulbosa*; Endangered)

- Great bur-reed (*Sparganium eurycarpum*; Threatened)
- Hairy-fruited sedge (*Carex trichocarpa*; Endangered)
- Smooth black sedge (*Carex nigra*; Endangered)
- Tufted yellow-loosestrife (*Lysimachia thyrsiflora*; Threatened)

No rare, threatened, or endangered wildlife were identified within proximity to proposed work areas of the project.

### 2.6.1 RTE Plant Species and Conservation Measures

Of the five state-listed plant species identified in the NHB DataCheck, great bur-reed and tufted yellow-loosestrife have known historic occurrences that overlap with the project area. The remaining three species do not have known historic occurrences within the project area. However, rare plant surveys will be conducted in suitable wetland habitat for each species to determine presence and absence prior to construction to avoid potential impacts. Correspondence with NHB is attached in Appendix C.

#### 2.6.1.1 Bulbous bitter-cress

Bulbous bitter-cress is an obligate wetland species that occurs in forested swamps, low floodplain forest, and moist thickets. This species is typically in bloom from May to June. While historic known occurrences of this species do not overlap with the proposed work area, plant surveys will be conducted during the 2023 growing season to determine presence and absence of individuals within and adjacent to the proposed work area. The following mitigation measures will be implemented to avoid adverse impacts to this species:

- Rare plant surveys to determine presence/absence.
  - Flag plant locations and locate with a GPS unit.
- Avoid direct impacts to areas of occurrence, if feasible.
- Use of wetland timber matting in areas of occurrence if avoidance is not feasible.
  - Utilize timber matting outside of flowering/fruitletting period.
  - Remove matting immediately upon the completion of work to avoid permanent impacts to vegetation and wetland hydrology.
- Ongoing weekly monitoring during construction to assure potential impacts to the species are avoided.
- Monitoring to assure removal of work pads promptly upon completion of work.
- Completion of a follow-up survey in the 2024 growing season to assess and document potential impacts following removal of the matting. An NHB Rare Species Reporting Form will be completed as part of the survey.

#### 2.6.1.2 Great bur-reed

Great bur-reed is an obligate wetland species that occurs in swamps, marshes, and along the edges of shallow lakes and ponds. This species is typically in bloom from March to November. Historic known occurrences of this species overlap with the proposed work area in Great Bog (Portsmouth). Plant surveys will be conducted during the 2023 growing season to determine presence and absence of individuals within and adjacent to the proposed work area. The following mitigation measures will be implemented to avoid adverse impacts to this species:

- Rare plant surveys to determine presence/absence.

- Flag plant locations and locate with a GPS unit.
- Avoid direct impacts to areas of occurrence, if feasible.
- Use of wetland timber matting in areas of occurrence if avoidance is not feasible.
  - Remove matting immediately upon the completion of work to avoid permanent impacts to vegetation and wetland hydrology.
- Ongoing weekly monitoring during construction to assure potential impacts to the species are avoided.
- Monitoring to assure removal of work pads promptly upon completion of work.
- Completion of a follow-up survey in the 2024 growing season to assess and document potential impacts following removal of the matting. An NHB Rare Species Reporting Form will be completed as part of the survey.

### 2.6.1.3 Hairy-fruited sedge

Hairy-fruited sedge is an obligate wetland species that occurs in forested swamps, floodplains, marshes, and wet meadows. This species is typically in bloom from May to August. While historic known occurrences of this species do not overlap with the proposed work area, plant surveys will be conducted during the 2023 growing season to determine presence and absence of individuals within and adjacent to the proposed work area. The following mitigation measures will be implemented to avoid adverse impacts to this species:

- Rare plant surveys to determine presence/absence.
  - Flag plant locations and locate with a GPS unit.
- Avoid direct impacts to areas of occurrence, if feasible.
- Use of wetland timber matting in areas of occurrence if avoidance is not feasible.
  - Utilize timber matting outside of flowering/fruited period.
  - Remove matting immediately upon the completion of work to avoid permanent impacts to vegetation and wetland hydrology.
- Ongoing weekly monitoring during construction to assure potential impacts to the species are avoided.
- Monitoring to assure removal of work pads promptly upon completion of work.
- Completion of a follow-up survey in the 2024 growing season to assess and document potential impacts following removal of the matting. An NHB Rare Species Reporting Form will be completed as part of the survey.

### 2.6.1.4 Smooth black sedge

Smooth black sedge is a facultative wetland species that occurs in wet meadows. This species is typically in bloom from June - August. While historic known occurrences of this species do not overlap with the proposed work area, plant surveys will be conducted during the 2023 growing season to determine presence and absence of individuals within and adjacent to the proposed work area. The following mitigation measures will be implemented to avoid adverse impacts to this species:

- Rare plant surveys to determine presence/absence.
  - Flag plant locations and locate with a GPS unit.
- Avoid direct impacts to areas of occurrence, if feasible.
- Use of wetland timber matting in areas of occurrence if avoidance is not feasible.
  - Utilize timber matting outside of flowering/fruited period.



- Remove matting immediately upon the completion of work to avoid permanent impacts to vegetation and wetland hydrology.
- Ongoing weekly monitoring during construction to assure potential impacts to the species are avoided.
- Monitoring to assure removal of work pads promptly upon completion of work.
- Completion of a follow-up survey in the 2024 growing season to assess and document potential impacts following removal of the matting. An NHB Rare Species Reporting Form will be completed as part of the survey.

#### **2.6.1.5 Tufted yellow-loosestrife**

Tufted yellow-loosestrife is an obligate wetland species that occurs in bogs, fens, swamps, and wetland margins. This species is typically in bloom from May to July. Historic known occurrences of this species overlap with the proposed work area in Great Bog (Portsmouth). Plant surveys will be conducted during the 2023 growing season to determine presence and absence of individuals within and adjacent to the proposed work area. The following mitigation measures will be implemented to avoid adverse impacts to this species:

- Rare plant surveys to determine presence/absence.
  - Flag plant locations and locate with a GPS unit.
- Avoid direct impacts to areas of occurrence, if feasible.
- Use of wetland timber matting in areas of occurrence if avoidance is not feasible.
  - Utilize timber matting outside of flowering/fruitletting period.
  - Remove matting immediately upon the completion of work to avoid permanent impacts to vegetation and wetland hydrology.
- Ongoing weekly monitoring during construction to assure potential impacts to the species are avoided.
- Monitoring to assure removal of work pads promptly upon completion of work.
- Completion of a follow-up survey in the 2024 growing season to assess and document potential impacts following removal of the matting. An NHB Rare Species Reporting Form will be completed as part of the survey.

## Section 3 Project Description

The E194 and U181 Structure Replacement Project includes the replacement of 45 overhead electric utility structures and associated static wire and pole relocation work at nine (9) structures. The entire project will result in 479,175 square feet of disturbance, including 272,630 square feet of disturbance associated with temporary construction matting. Areas subject to work pad grading and associated access road improvements total 206,545 square feet and are the areas subject to Alteration of Terrain Law and Rules (RSA 485-A:17, Env-Wq 1500). Representative photographs of the project area are provided in Appendix E.

### 3.1 Structure Replacements and Maintenance

The structure replacements will consist of the drilling of holes up to four feet in diameter and the installation of a caisson (metal culvert) into each hole approximately 15 to 20 feet (10% of structure height plus 2 feet) below the ground surface. The new poles will be placed into the caissons and backfilled with clean, suitable materials. Spoils generated from the drilling operations will be disposed in appropriate upland areas at least 100 feet away from wetland areas and then stabilized.

Concrete block anchors will be installed by excavating trenches to a sufficient depth, installing the anchors, and backfilling over the block anchors. Where block anchors are required within a wetland, hydric soils will be segregated upon excavation and replaced to maintain the hydric soil profile. Any additional spoils will be disposed in upland areas away from wetlands. Disturbed areas will be seeded with a conservation seed mix and mulched with straw.

Once the new poles are installed, old poles will then be removed by cutting them to the ground surface. The old poles, cross-arms, wires, and accessory equipment will be removed and disposed off-site. The pole butts associated with the existing poles will only be removed if they impact the structural integrity of the new poles.

### 3.2 Access

Access road improvements and development are required to provide reliable access for the proposed work as well as for future maintenance and emergency repairs. The access routes will follow existing entrances onto the ROW and have been sited to minimize ground disturbance. Improvements will include regrading as needed or creating new access with up to a 16-foot-wide disturbance. Disturbance of wetlands and sensitive upland areas will be minimized through the use of wooden timber matting.

### 3.3 Work Pad Construction

The proposed project includes the construction of 100-foot by 100-foot gravel work pads to provide level and stable surfaces needed to facilitate the structure installations. Work pads in upland areas will be constructed of crushed stone, top-dressed with 1.5- to 3-inch clean stone. Where work pads overlap with wetlands and other sensitive areas, they will utilize temporary construction matting, which will be removed upon completion of the

work. Any areas of soil disturbance around the work pads will be stabilized with seed and straw mulch. Matted upland work pads will be restored upon the removal of the timber mats, and exposed soils will be stabilized with seed and mulch.

### **3.4 Construction Sequence**

The work is proposed to begin in September 2023. The following is a description of the anticipated construction sequence. The actual sequence and schedule will be determined by the selected contractor(s).

- Install sediment and erosion controls.
- Upgrade access roads and build work pads, install construction mats where needed.
- Conduct structure replacements.
- Remove construction mats and stabilize/restore disturbed areas.
- Stabilize exposed soils within the ROW.
- Remove erosion and sedimentation controls following stabilization.

### **3.5 Best Management Practices**

Work will be performed utilizing the latest *Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire* (NH DNCR, 2019) to limit impacts to the environment. Where deemed necessary, perimeter protective measures consisting of silt fence, straw wattles, and or straw bales will be installed around the structure to minimize potential impacts to the nearby resource areas. Water bars will be installed in areas of road improvements and in areas with steep slopes as identified by the Contractor. Any areas of disturbed soil will be mulched with hay or straw as necessary following the completion of work. No equipment or material will be stored within wetland resource areas or wellhead protection areas. Erosion controls will be implemented during construction, as noted on the project plans in Appendix G, to minimize the potential impacts during construction.

Once project work is complete, any disturbed upland areas will be restored and stabilized. Areas of exposed soils will be seeded and/or mulched appropriately.

## **Section 4**

# **Regulatory Compliance**

Total impacts associated with improving the access roads and work pads is approximately 206,545 square feet. Therefore, all of the project is subject to Alteration of Terrain Permitting in accordance with Env-Wq 1502.58 (b)(2).

Copies of this Alteration of Terrain application have been sent to the governing bodies of Portsmouth and Newington in compliance with Env-Wq 1503.05(e).

In addition to this Alteration of Terrain Permit, the following permit applications, notifications, and agency reviews are being conducted:

- Permits
  - Utility Maintenance Statutory Permit by Notifications:
    - Portsmouth
    - Newington
  - 2022 EPA Construction General Permit
- Agency Reviews
  - NH Natural Heritage Bureau
  - US Fish and Wildlife IPaC Review
  - NH Department of Historic Resources Request for Project Review

**Tighe&Bond**

**APPENDIX A**



**ALTERATION OF TERRAIN WAIVER REQUEST****RSA/Rule: RSA 485-A:17, Env-Wq 1500**

Water Division/ Alteration of Terrain Bureau/Land Resources Management  
 29 Hazen Drive, PO BOX 95  
 Concord, New Hampshire 03302-0095

**A. PROJECT INFORMATION**

E194 &amp; U181 Structure Replacement Project

**Project Name**

Existing Lines E194 &amp; U181 Rights-of-Way

**Street Address**

Portsmouth and Newington

**City/Town**

N/A

**Zip Code**

N/A

**Assessors Map/Lot Number****B. PROPERTY OWNER INFORMATION**

Ashley

**First Name**

Friend

**Last Name**

Eversource Energy Service Company

**Organization**

13 Legends Drive

**Street Address**

Hooksett

**City/Town**

NH

**State**

03106

**Zip Code**

Ashley.Friend@Eversource.com

**Email**

603-634-2992

**Telephone****C. PERSON REQUESTING THE WAIVER**

Katy

**First Name**

Wilkins

**Last Name**

Tighe &amp; Bond

**Organization**

53 Southampton Road

**Street Address**

Westfield

**City/Town**

MA

**State**

01085

**Zip Code**

KLWilkins@tighebond.com

**Email**

413-875-1305

**Telephone**

## D. WAIVER REQUESTS

Env-Wq 1503.12(d)

Measurement of Contiguous Area/10 Year Requirement

**Waiver Requested From Rule**

**Name of Rule**

### Explanation of Request

A waiver is being requested from the requirement to include terrain disturbances that occurred: (1) within 10 years prior to the proposed project or (2) within 10 years after the project ends.

### Waiver Timeline

Permanent

### Alternative Proposed

Not Applicable

### Compliance with Env-Wq 1509.04:

The reason the waiver is requested is because soil disturbances associated with small maintenance activities occur regularly along utility lines. These disturbances are restored and/or stabilized following construction following prescribed utility BMPs. These maintenance activities cannot be predicted into the future and it is an excessive burden to require a full Alteration of Terrain permit for smaller disturbances.

Env-Wq 1503.21 (d)(6) and (7)

Notification; Certifications/Relocation of a Parking Area

**Waiver Requested From Rule**

**Name of Rule**

### Explanation of Request

A waiver is being requested from the requirement to apply for an amended or new permit if a roadway centerline or parking area has been relocated more than 20 feet from the originally approved location.

### Waiver Timeline

Permanent

### Alternative Proposed

Not Applicable

### Compliance with Env-Wq 1509.04: Waiver Criteria

Contractors need to have flexibility in how they move large equipment across difficult terrain and complex site conditions, which can be hard for permitting specialists to predict. For example, a new beaver dam could require shifting an access road across the ROW to avoid a newly flooded area. Requiring an amendment for such adjustments would prove impractical and overly burdensome to complete construction within allotted time frames and scheduled power outages needed to maintain the reliable transmission of power to the public.

Env-Wq 1504.09

Stormwater Drainage Report; Drainage Area Plans; Hydrologic Soil Group Plans

**Waiver Requested From Rule****Name of Rule****Explanation of Request**

A waiver is being requested from the requirement to prepare a Stormwater Drainage Report; Drainage Area Plans; Hydrologic Soil Group Plans because no new impervious areas are proposed (except for the minimal footprint of the new transmission line structures) and therefore, stormwater detention and treatment practices are not proposed.

**Waiver Timeline**

Permanent

**Alternative Proposed**

Not Applicable

**Compliance with Env-Wq 1509.04: Waiver Criteria**

The proposed project involves the replacement of existing transmission line infrastructure. The proposed land disturbance is associated with ground improvements for vehicle access and work pads at structure replacement locations. This project is necessary to improve safety and reliability of the structures to provide electricity to local customers.

We do not anticipate the proposed structure replacement activities to significantly alter the drainage characteristics of the project area and therefore do not expect a stormwater drainage report or drainage areas plans to show significant difference between the existing and proposed conditions.

The soil series from NRCS web soil survey was mapped for the project to provide a general understanding of the soils within the project area. Given the soil type information collected, we do not believe hydrologic soil group plans are necessary or would provide added benefit. Best Management Practices will be utilized to protect wetlands and waters from erosion, sedimentation, or other environmental degradation.

Env-Wq 1503.11(g)(1) and (2)

Types of Plans Required; Chloride Management Plan

**Waiver Requested From Rule****Name of Rule****Explanation of Request**

A waiver is being requested from the requirement to prepare a Chloride Management Plan because the use of chlorides is not proposed.

**Waiver Timeline**

Permanent

**Alternative Proposed**

Not Applicable

**Compliance with Env-Wq 1509.04: Waiver Criteria**

The proposed project does not involve the use of chemicals containing chloride and thus introduction of chlorides to stormwater runoff is not anticipated. Best Management Practices will be utilized to protect impaired waters from erosion, sedimentation, or other environmental degradation.

**E. SIGNATURES**



\_\_\_\_\_  
/ Friend,  
Eversource Energy Service Company



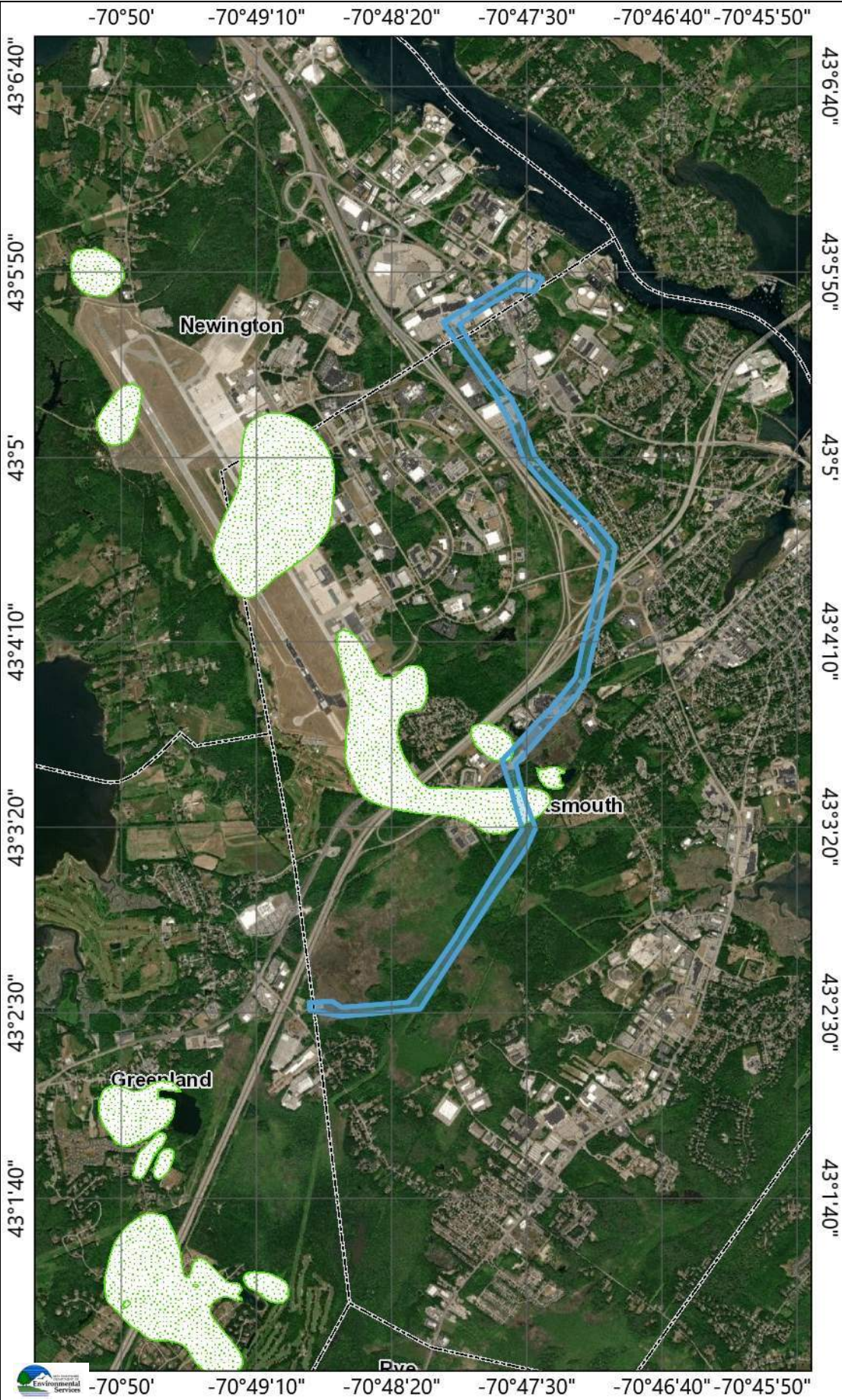
\_\_\_\_\_  
**Person Requesting the Waiver:** Kate Wilkins  
Tighe & Bond

**Tighe&Bond**






**APPENDIX B**



# E194 & U181 Structure Replacement Project



## Legend

-  Groundwater Classification / GA1
-  Groundwater Classification / GA2
-  Outstanding Resource Water Watersheds
-  Designated Rivers Quarter Buffer
-  Town Boundaries

Map Scale

1: 47,125

© NH DES, <http://des.nh.gov>

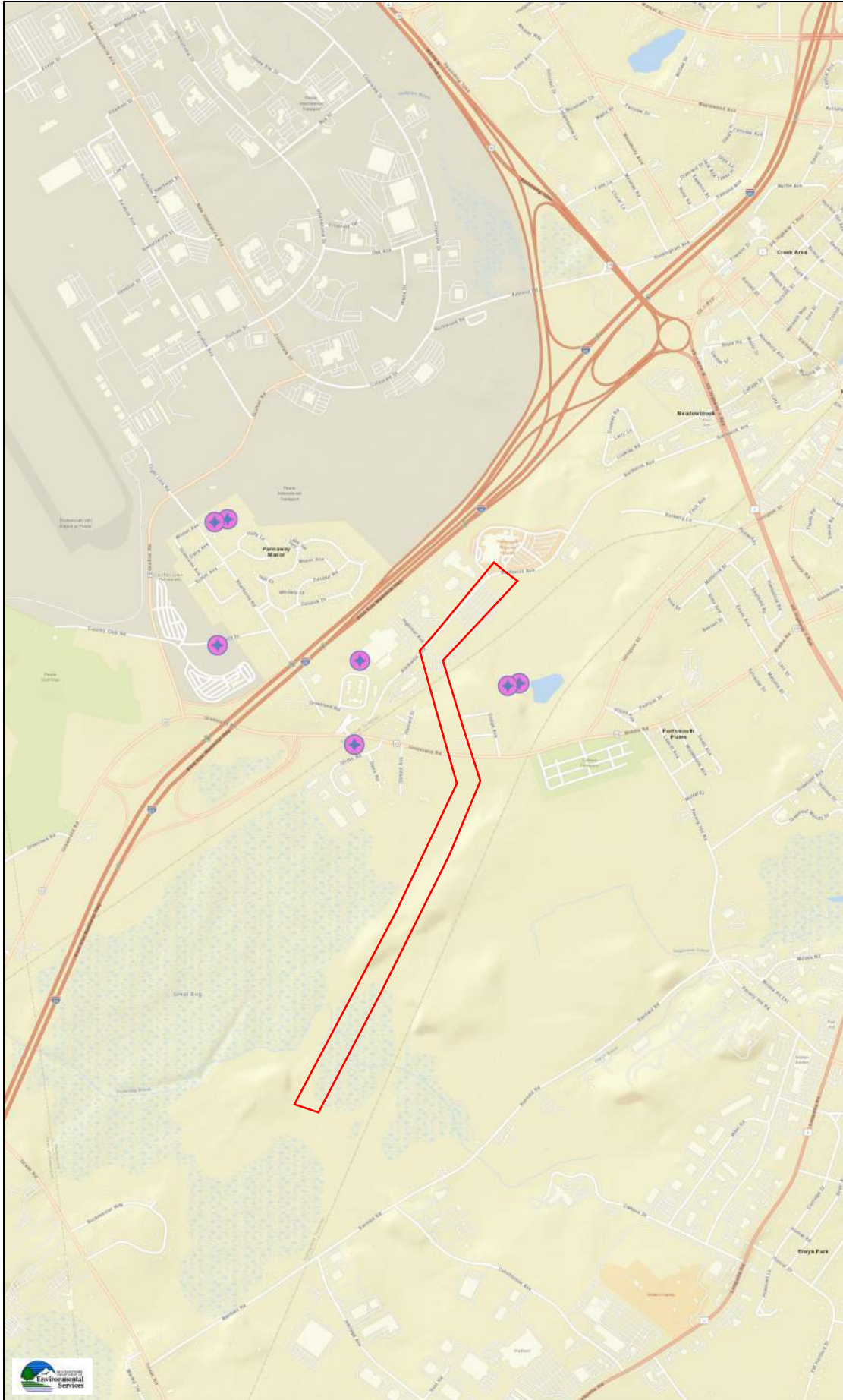
Map Generated: 2/10/2023



## Notes



# Public Water Supply Wells - Lines E194 & U181



## Legend

- Public Water Supply Wells

Map Scale

1: 24,000

© NH DES, <http://des.nh.gov>

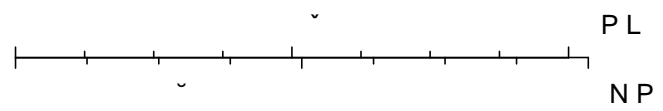
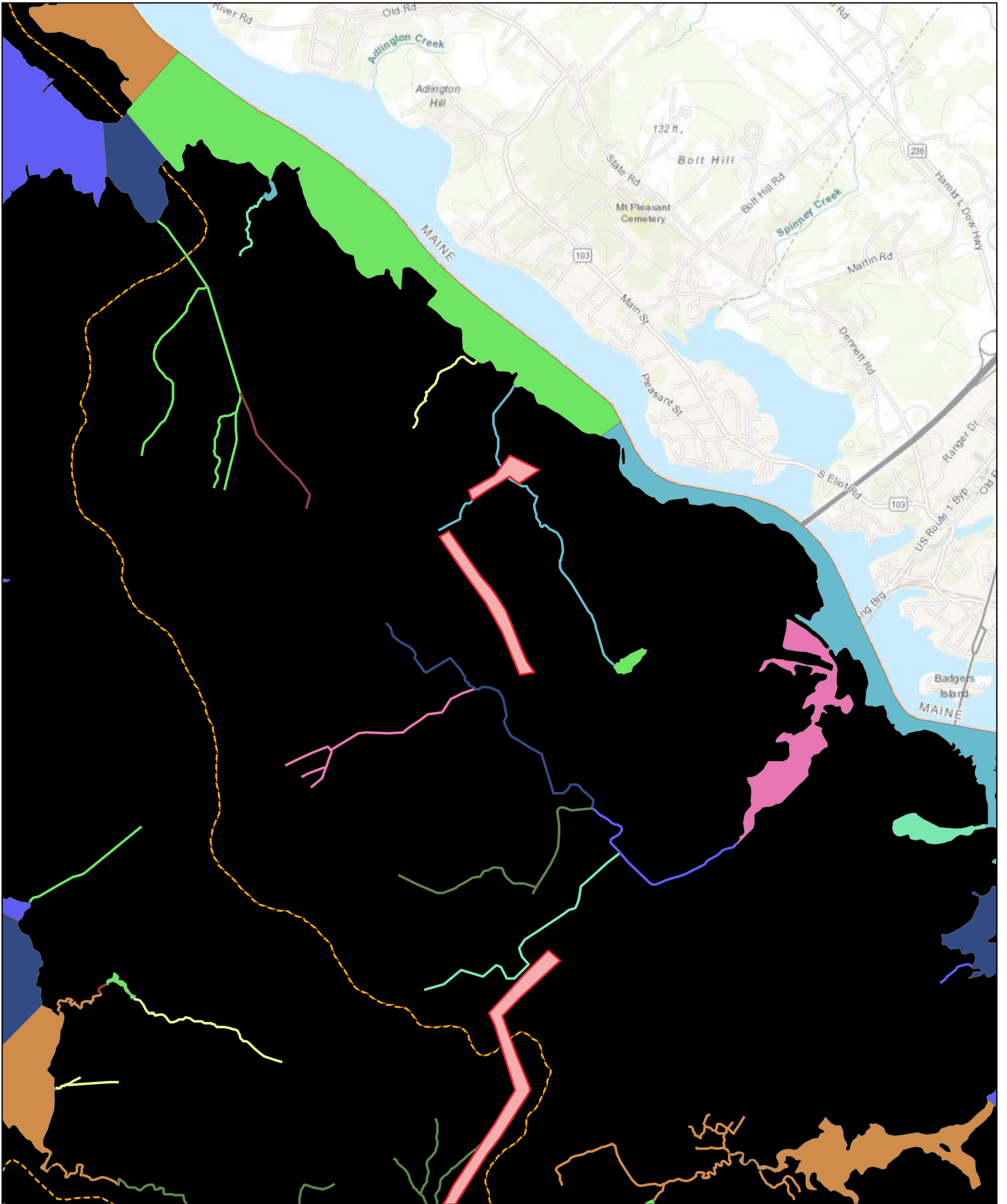
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## Notes



# Impaired Waters Map 0 D S



&LW\ RI 3RUWVPRXWK 1+ (VUL &DQGDG  
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**Tighe&Bond**

**APPENDIX C**

**Memo**

NH Natural Heritage Bureau  
NHB DataCheck Results Letter

Please note: portions of this document are confidential.  
Maps and NHB record pages are confidential and should be redacted from public documents.

**To:** Julia Novotny  
177 Corporate Drive  
Portsmouth, NH 03801

**From:** NHB Review, NH Natural Heritage Bureau

**Date:** 2/14/2023 (valid until 02/14/2024)

**Re:** Review by NH Natural Heritage Bureau

**Permits:** MUNICIPAL POR - Portsmouth, Greenland, Newington, NHDES - Alteration of Terrain Permit, NHDES - Utility Statutory Permit by Notification (SPN), OTHER - FAA Notification, USACE - General Permit, USEPA - Stormwater Pollution Prevention

**NHB ID:** NHB23-0278

**Town:** Portsmouth

**Location:** Utility Rights-of-Way

**Description:** Eversource Energy is proposing to replace 41 existing utility structures on the E194 and U181 Lines and associated static wire work in Portsmouth, Greenland, and Newington, NH. All work will take place within the existing utility rights-of-way (ROW). Approximately 100'x100' work pads will be constructed for each structure replacement to create a safe and stable work area. Timber matting will be used in all wetland areas and areas will be restored in-kind following construction. Work is anticipated to occur in the spring of 2023.

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

**Comments NHB: Please provide NHB with proposed plans, representative photos during the growing season, and proposed job timing.**

**F&G: No comments at this time.**

Natural Community	State <sup>1</sup>	Federal	Notes
Drainage marsh - shrub swamp system	--	--	Threats to this community include changes to the wetland's hydrology either through damming or increasing drainage. Significant increases in nutrients and pollutants from stormwater runoff could also have a deleterious effect on the wetland.
Herbaceous seepage marsh*	--	--	As this wetland is strongly influenced by groundwater seepage, it could be affected by landscape alterations which modify groundwater movement or increase stormwater flow into it.
Red maple - sensitive fern swamp*	--	--	These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic

# Memo

## NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff.

Plant species	State <sup>1</sup>	Federal	Notes
bulbous bitter-cress ( <i>Cardamine bulbosa</i> )*	E	--	This species occurs in forested swamps, low floodplain forest, and moist thickets.. Threats to the plants include canopy removal and destruction (draining) of its habitat.
great bur-reed ( <i>Sparganium eurycarpum</i> )	T	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
hairy-fruited sedge ( <i>Carex trichocarpa</i> )*	E	--	This species occurs in forested swamps, and would be threatened by changes to local hydrology as well as activities such as logging that opened up the canopy.
smooth black sedge ( <i>Carex nigra</i> )*	E	--	The largest threat to this species is loss of habitat.
tufted yellow-loosestrife ( <i>Lysimachia thyrsiflora</i> )	T	--	As a resident of peatlands, this species is susceptible to any changes to the wetland's hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbances.

<sup>1</sup>Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (\*) indicates that the most recent report for that occurrence was more than 20 years ago.

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Disclaimer: 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.

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### **IMPORTANT: NHFG Consultation**

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

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

## Julia Novotny

---

**From:** DNCR: NHB Review <nhbreview@dncr.nh.gov>  
**Sent:** Friday, March 17, 2023 2:17 PM  
**To:** Julia Novotny  
**Cc:** Katy L. Wilkins; Friend, Ashley C  
**Subject:** RE: NHB Consultation Request for AoT Compliance - NHB ID: NHB23-0278

[ Caution - External Sender ]

Julia,

Thank you for sending over the shapefiles and plans for the E194 & U181 Structure Replacement project in Portsmouth and Newington.

### NHB Recommends:

- A survey for **tufted yellow-loosestrife** (*Lysimachia thyrsoiflora*) around Proposed Structures **48, 49, 50, 51, 52, 53, 54, and 66** on **Line U181**, Proposed Structures **48, 49, 50, 51, 52, 53, and 66** on **Line E194**, and both Proposed Structures labeled **65.5** bordering the Ocean Road Substation (map below). Please also survey work pad/matting locations, areas outlined as AoT, and associated access roads. Please focus survey efforts near marshes, edges of fens, and wetlands. Recommended timeframe is while plants are in flower approximately mid-June to late August.





- A survey for **great bur-reed** (*Sparganium eurycarpum*) around Proposed Structures **48, 49, 50, 51, 52, 53, and 54** on **Line U181**, and Proposed Structures **48, 49, 50, 51, 52, and 53** on **Line E194** including work pad/ matting locations or areas outlined as AoT, and associated access roads. Please focus survey efforts in areas near slow moving mud/shallow water of streams. Flowering begins June, and fruiting is between late July and early September.
- A survey for **hairy-fruited sedge** (*Carex trichocarpa*) around Proposed Structures **48, 49, 50, 51, 52, 53, and 54** on **Line U181**, and Proposed Structures **48, 49, 50, 51, 52, and 53** on **Line E194** including work pad/ matting locations or areas outlined as AoT, and associated access roads. Please focus survey efforts in areas of wet meadows, ditches, riverside marshes, and fields. Recommended survey for this rare plant from approximately early June to early July so that it can be correctly identified with mature perigynia.
- A survey for **smooth black sedge** (*Carex nigra*) around Proposed Structures **13, 14, 15, 16 and 19** on **Line U181**, and Proposed Structures **12, 13, 14, and 19** on **Line E194** including work pad/ matting locations or areas outlined as AoT and associated access roads. Please survey for this rare plant while flowering/fruiting approximately mid-June to late August.
- A survey for **bulbous bitter-cress** (*Cardamine bulbosa*) around Proposed Structures **13, 14, 15, and 16** on **Line U181**, and Proposed Structures **12, 13, and 14** on **Line E194** including work pad/ matting locations or areas outlined as AoT and associated access roads. Please survey for this rare plant species while in flower approximately early May to early June.

Please contact NHB with results when surveys are complete. If located, please document plants with GPS, diagnostic photos, and one of the reporting forms posted on our website at: [Rare Plant List | Reports | NH Division of Forests and Lands](#)

Let me know if you have any questions, or if there are any changes to proposed work.

Best,

Ashley Litwinenko  
**Environmental Reviewer**  
**Natural Heritage Bureau (NHB)**  
 Division of Forests & Lands - DNCR  
 172 Pembroke Rd., Concord, NH 03301  
 Phone: 603-271-2834  
[Datacheck Tool](#)  
[NHB Botany information](#)

---

**From:** Julia Novotny <JNovotny@tighebond.com>  
**Sent:** Thursday, March 16, 2023 1:33 PM  
**To:** DNCR: NHB Review <nhbreview@dn-cr.nh.gov>  
**Cc:** Friend, Ashley C <ashley.friend@eversource.com>; Katy L. Wilkins <KLWilkins@tigheBond.com>  
**Subject:** RE: NHB Consultation Request for AoT Compliance - NHB ID: NHB23-0278

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

Ashley,

Shapefiles of the proposed replacements, work pads, and access roads are attached.

Please let me know if there is anything else you need to facilitate review.

Best,

## Julia Novotny

Environmental Scientist 2



o. 603.294.9210 | m. 203.841.8960

177 Corporate Drive Portsmouth, NH 03801

w: [tighebond.com](http://tighebond.com) | [halvorsondesign.com](http://halvorsondesign.com)



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**From:** DNCR: NHB Review <[nhbreview@dncr.nh.gov](mailto:nhbreview@dncr.nh.gov)>

**Sent:** Thursday, March 16, 2023 9:31 AM

**To:** Julia Novotny <[JNovotny@tighebond.com](mailto:JNovotny@tighebond.com)>

**Cc:** Friend, Ashley C <[ashley.friend@eversource.com](mailto:ashley.friend@eversource.com)>; Katy L. Wilkins <[KLWilkins@tigheBond.com](mailto:KLWilkins@tigheBond.com)>

**Subject:** RE: NHB Consultation Request for AoT Compliance - NHB ID: NHB23-0278

[ Caution - External Sender ]

Hi Julia,

Thank you for providing the Consultation Request, and a kmz with project features for the E194 & U181 Structure Replacement project in Portsmouth and Newington.

Would it be possible for you to send shapefiles which include proposed structure replacements, structure removal locations, work pad locations, and proposed access roads? This will help NHB provide specific recommendations on survey locations in proximity to known rare plant occurrences in GIS.

Thank you,

Ashley Litwinenko

**Environmental Reviewer**

**Natural Heritage Bureau (NHB)**

Division of Forests & Lands - DNCR

172 Pembroke Rd., Concord, NH 03301

Phone: 603-271-2834

[Datacheck Tool](#)

[NHB Botany information](#)

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**From:** Julia Novotny <[JNovotny@tighebond.com](mailto:JNovotny@tighebond.com)>

**Sent:** Thursday, March 16, 2023 8:32 AM

**To:** DNCR: NHB Review <[nhbreview@dncr.nh.gov](mailto:nhbreview@dncr.nh.gov)>

**Cc:** Friend, Ashley C <[ashley.friend@eversource.com](mailto:ashley.friend@eversource.com)>; Katy L. Wilkins <[KLWilkins@tigheBond.com](mailto:KLWilkins@tigheBond.com)>

**Subject:** NHB Consultation Request for AoT Compliance - NHB ID: NHB23-0278

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



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Good morning,

Please find attached a consultation request for the Line E194 & U181 Structure Replacement Project in Portsmouth and Newington (NHB ID: NHB23-0278). Also attached is a KMZ file containing the project area. Should you have any questions or require additional information please do not hesitate to reach out.

Thank you,

**Julia Novotny**

Environmental Scientist 2

**Tighe&Bond**

o. 603.294.9210 | m. 203.841.8960

177 Corporate Drive Portsmouth, NH 03801

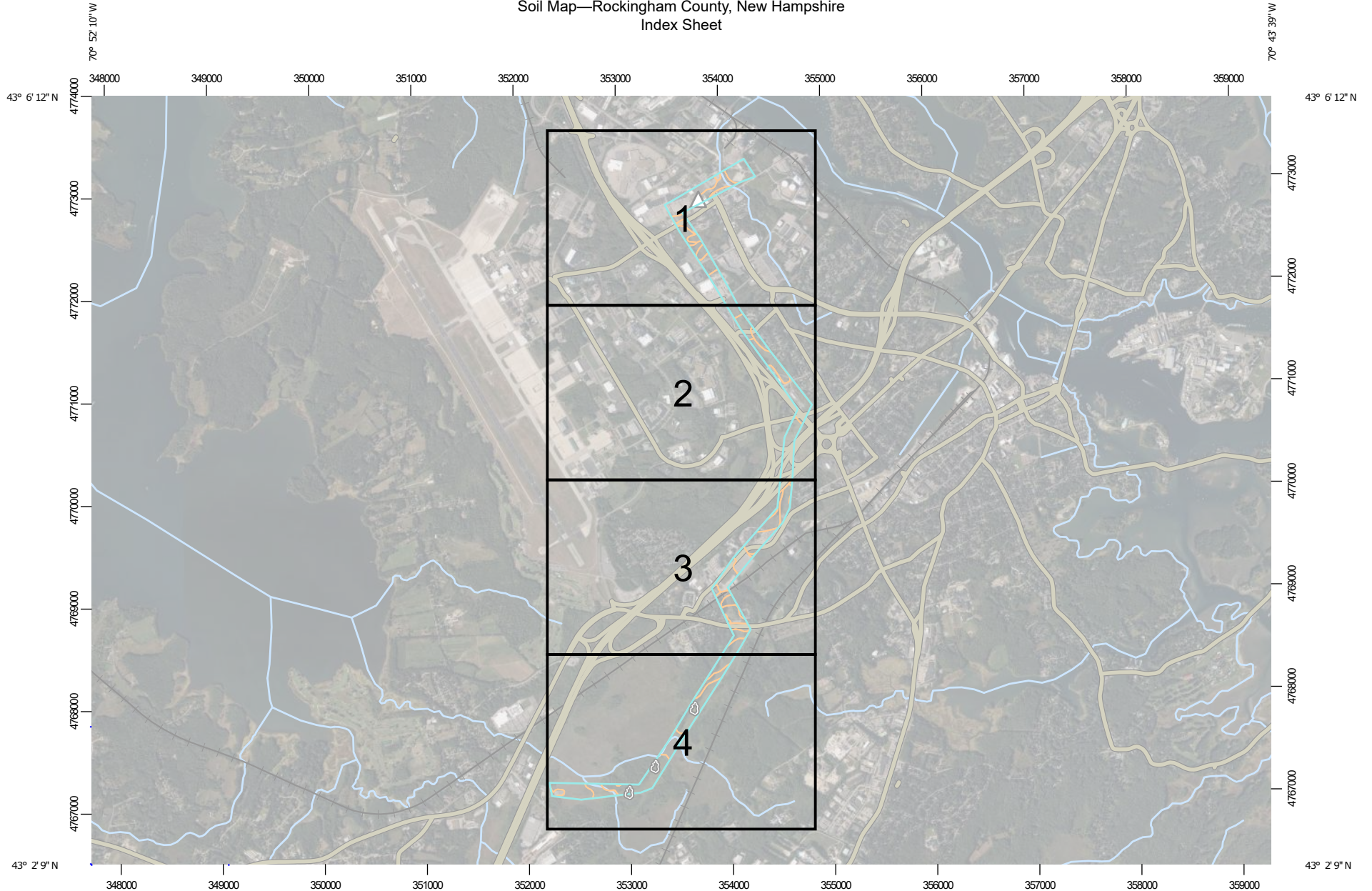
w: [tighebond.com](http://tighebond.com) | [halvorsondesign.com](http://halvorsondesign.com)



**Tighe&Bond**

**APPENDIX D**

Soil Map—Rockingham County, New Hampshire  
Index Sheet



Map Scale: 1:52,800 if printed on A landscape (11" x 8.5") sheet.

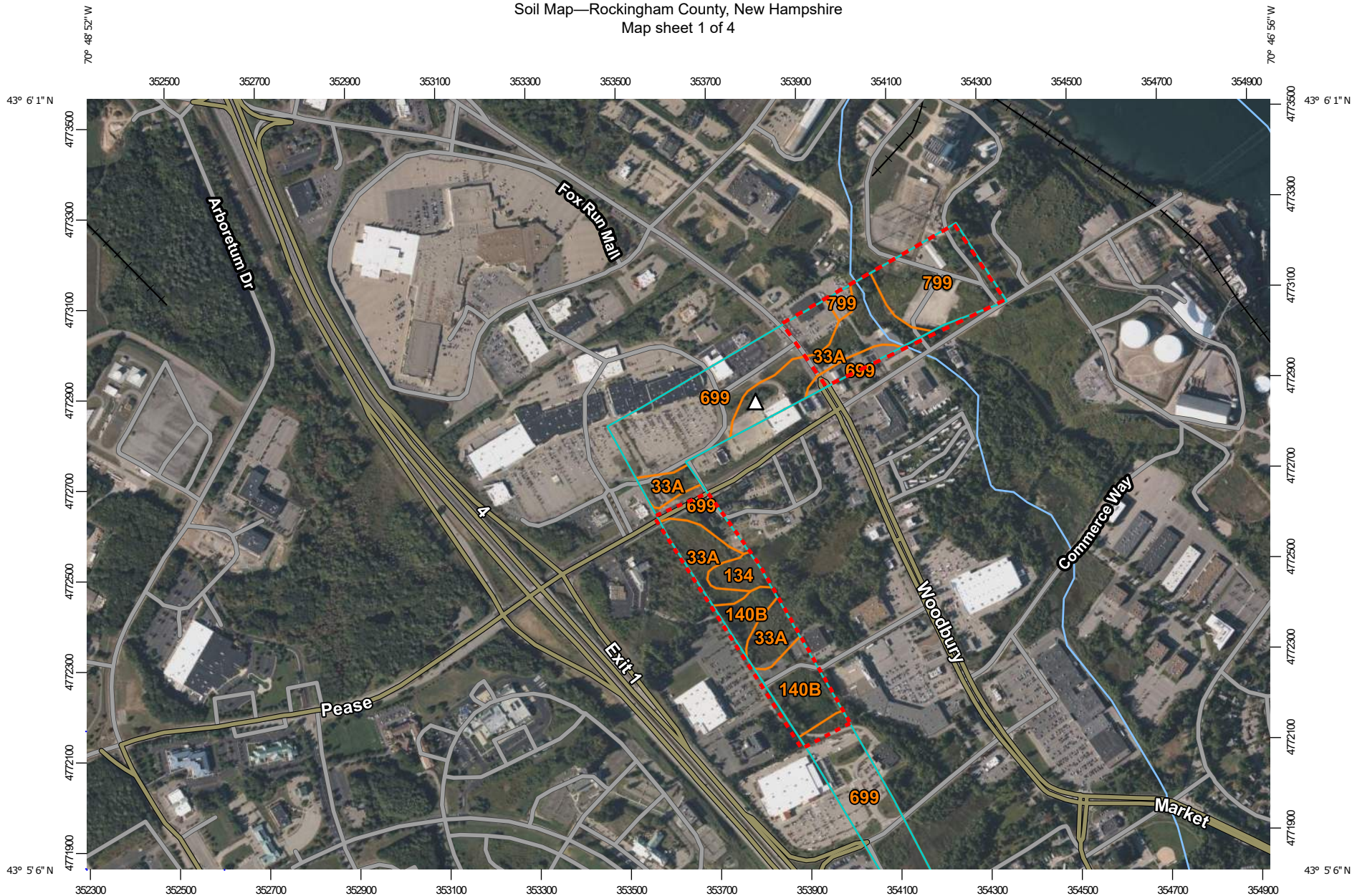


Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

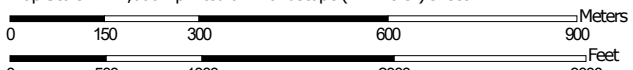




Soil Map—Rockingham County, New Hampshire  
Map sheet 1 of 4



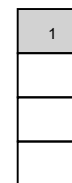
Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Joins sheet 2



Map Sheet Location



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

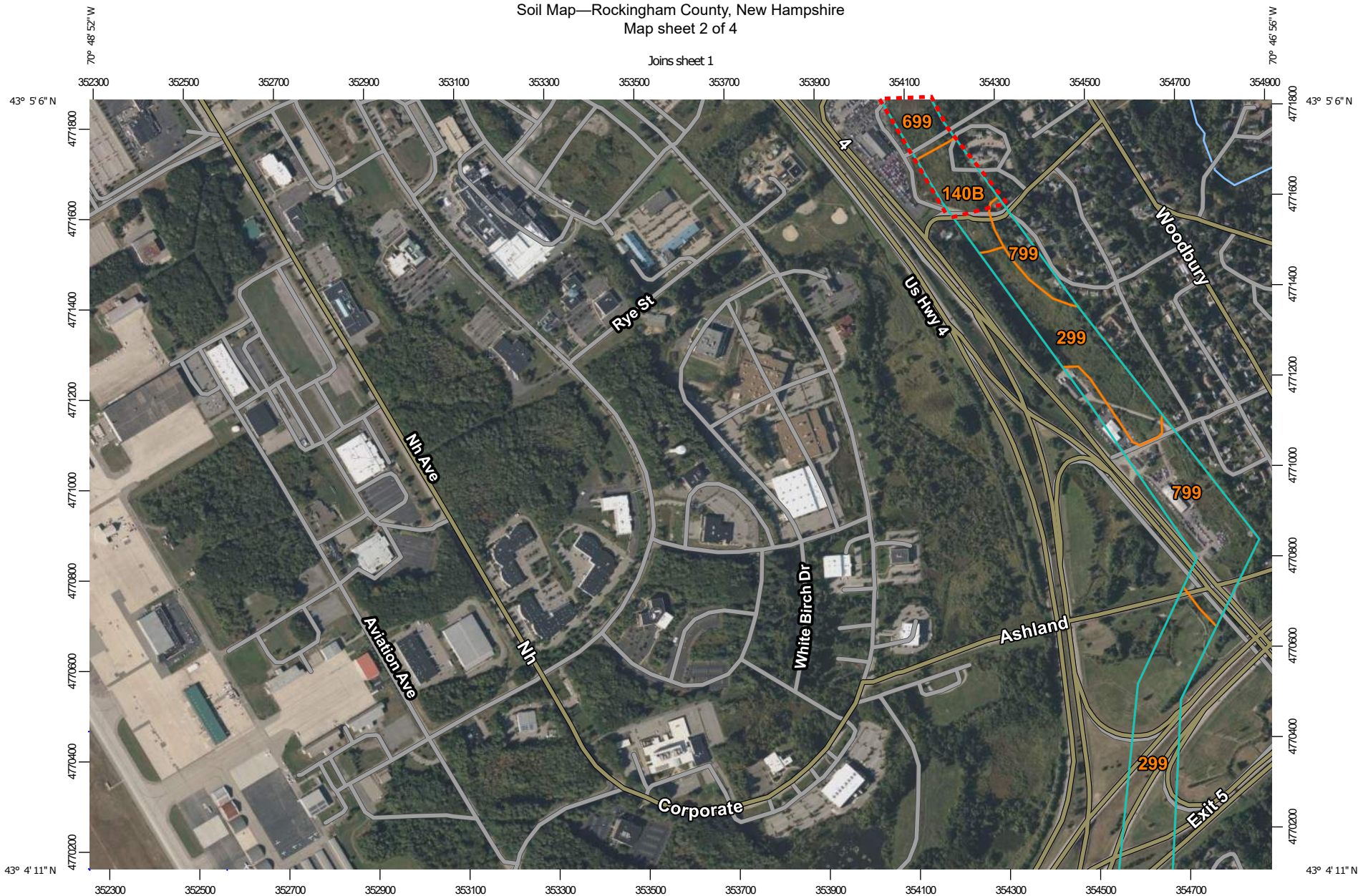
2/8/2023  
Page 2 of 7



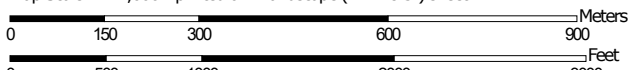
Soil Map—Rockingham County, New Hampshire  
Map sheet 2 of 4

Joins sheet 1

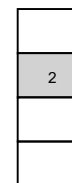
Joins sheet 3



Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



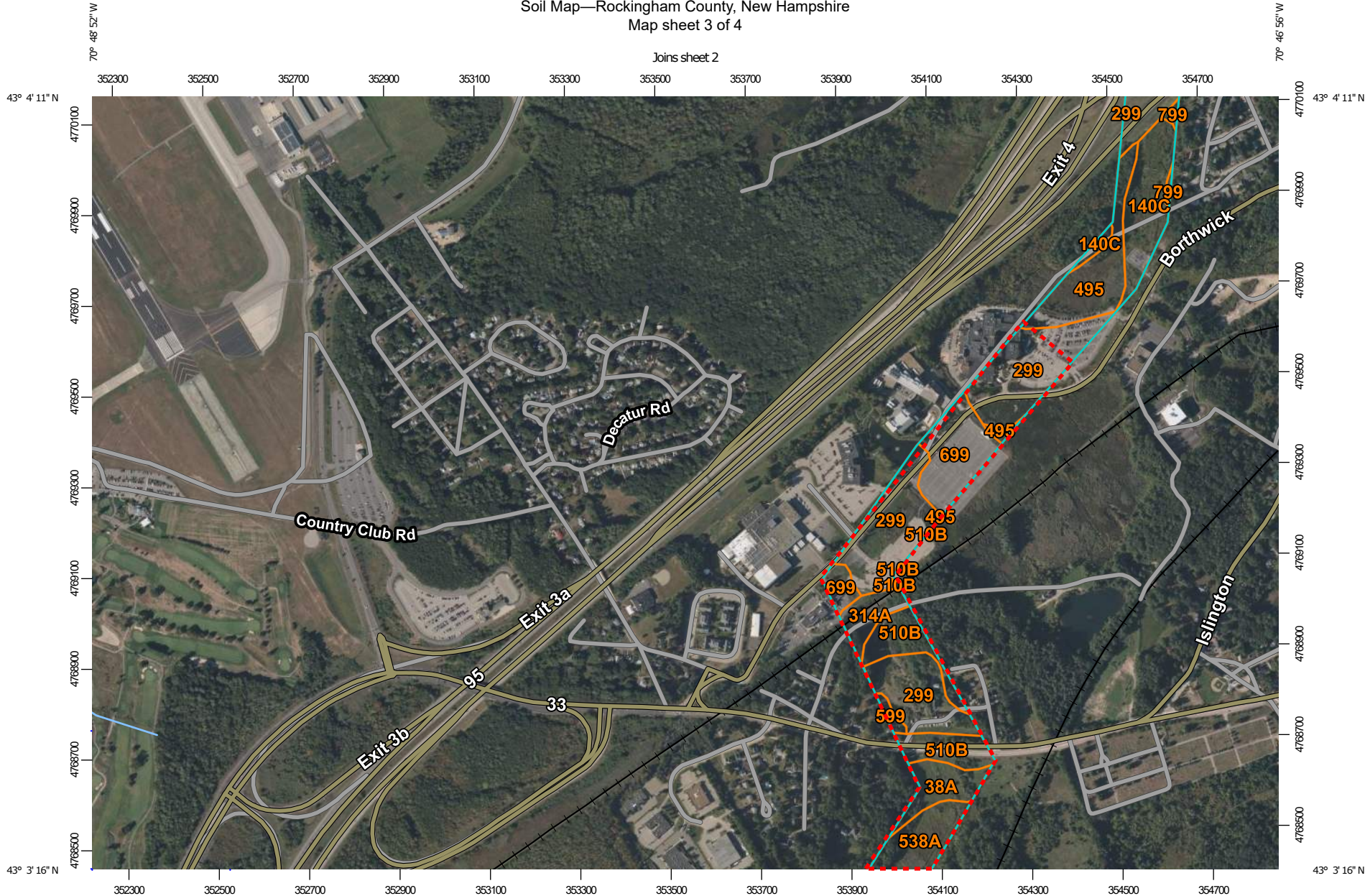
Map Sheet Location



Soil Map—Rockingham County, New Hampshire  
Map sheet 3 of 4

Joins sheet 2

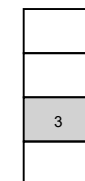
Joins sheet 4



Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Map Sheet Location



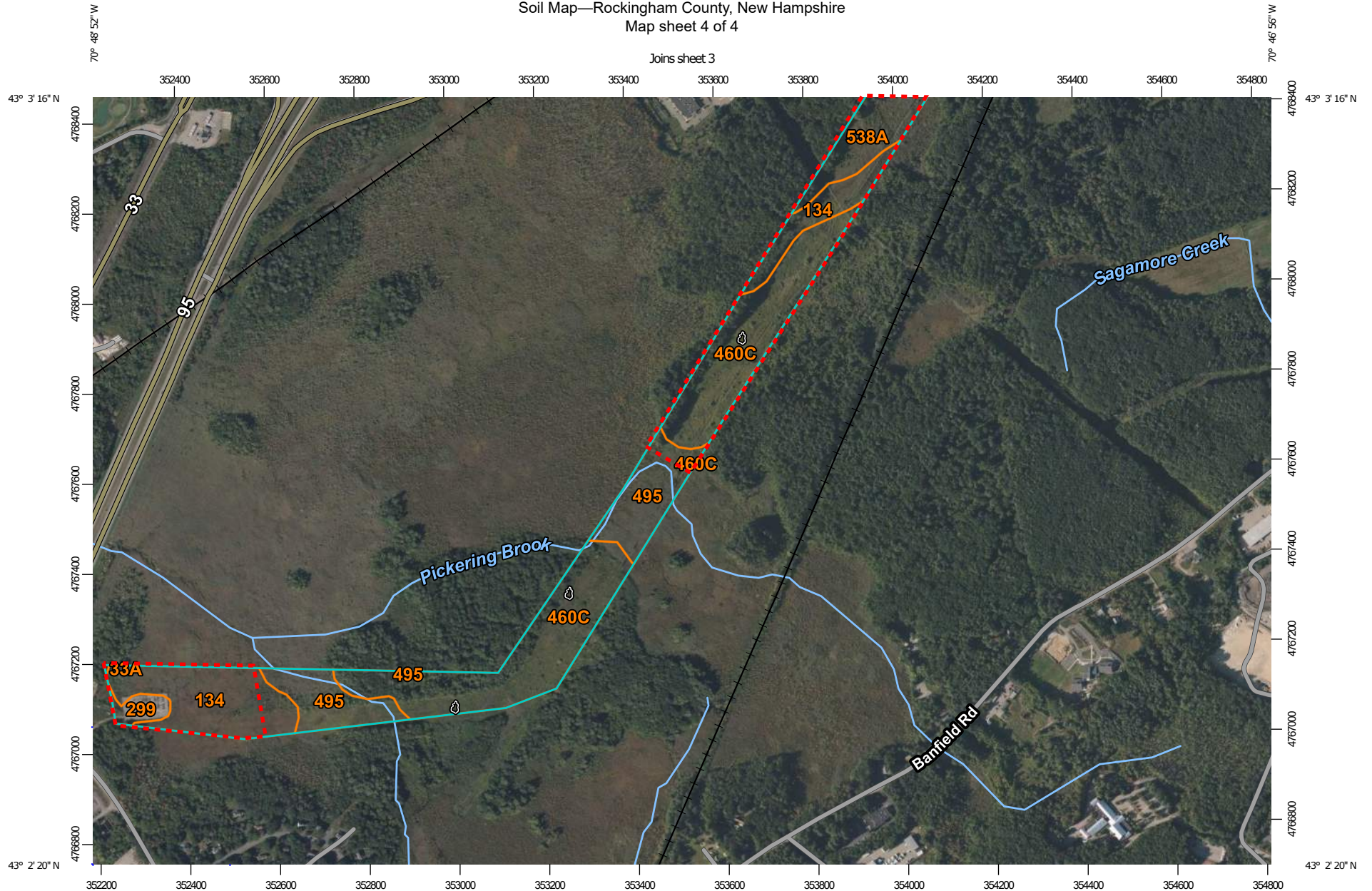
Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

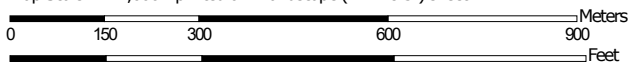


Soil Map—Rockingham County, New Hampshire  
Map sheet 4 of 4

Joins sheet 3



Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84






## MAP LEGEND




















### Area of Interest (AOI)







Area of Interest (AOI)

### Soils


-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points

### Special Point Features




-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


### Water Features

-  Streams and Canals

### Transportation

-  Rails
-  Major Roads
-  Local Roads

### Background

-  Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire  
 Survey Area Data: Version 25, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
33A	Scitico silt loam, 0 to 5 percent slopes	17.3	6.6%
38A	Eldridge fine sandy loam, 0 to 3 percent slopes	3.5	1.3%
134	Maybid silt loam	19.0	7.3%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	13.0	5.0%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	7.4	2.8%
299	Udorthents, smoothed	54.7	20.9%
314A	Pipestone sand, 0 to 5 percent slopes	2.6	1.0%
460C	Pennichuck channery very fine sandy loam, 8 to 15 percent slopes	34.1	13.0%
495	Natchaug mucky peat, 0 to 2 percent slopes	21.3	8.1%
510B	Hoosic gravelly fine sandy loam, 3 to 8 percent slopes	6.9	2.6%
538A	Squamscott fine sandy loam, 0 to 5 percent slopes	10.6	4.0%
599	Urban land-Hoosic complex, 3 to 15 percent slopes	0.5	0.2%
699	Urban land	41.2	15.7%
799	Urban land-Canton complex, 3 to 15 percent slopes	29.8	11.4%
<b>Totals for Area of Interest</b>		<b>262.1</b>	<b>100.0%</b>

**Tighe&Bond**


**APPENDIX E**

# Photographic Log

**Client:** Eversource Energy  
E194 & U181 Structure Replacement Project  
**Site:** Portsmouth and Newington, NH

**Job Number:** 14-5034-200

<b>Photograph No.: 1</b>	<b>Date:</b> 1/9/2023	<b>Direction Taken:</b> Southwest
<b>Description:</b> Overview of the E194 & U181 right-of-way in Great Bog (Portsmouth), facing southwest.		
		

<b>Photograph No.: 2</b>	<b>Date:</b> 1/9/2023	<b>Direction Taken:</b> Southeast
<b>Description:</b> View of Great Bog in the E194 & U181 right-of-way from an adjacent upland area immediately southeast of Greenland Road (Route 33) in Portsmouth where access will be constructed.		
		



# Photographic Log

**Client:** Eversource Energy **Job Number:** 14-5034-200  
E194 & U181 Structure Replacement Project  
**Site:** Portsmouth and Newington, NH

<b>Photograph No.:</b> 3	<b>Date:</b> 1/9/2023	<b>Direction Taken:</b> Southeast
<b>Description:</b> View of the E194 & U181 right-of-way in Great Bog looking at Structures 49 and 50, facing northwest.		
		

<b>Photograph No.:</b> 4	<b>Date:</b> 1/18/2023	<b>Direction Taken:</b> East
<b>Description:</b> View of the structures on the E194 and U181 Lines where static wire work is proposed at the Ocean Road Substation in Greenland/Portsmouth, facing east.		
		



# Photographic Log

**Client:** Eversource Energy **Job Number:** 14-5034-200  
E194 & U181 Structure Replacement Project  
**Site:** Portsmouth and Newington, NH

<b>Photograph No.:</b> 5	<b>Date:</b> 1/9/2023	<b>Direction Taken:</b> Northeast
<b>Description:</b> View of the E194 & U181 right-of-way adjacent to Gosling Road looking at Structure 13 (indicated by the arrow) on the U181 Line, facing northeast.		
		

<b>Photograph No.:</b> 6	<b>Date:</b> 1/9/2023	<b>Direction Taken:</b> Northwest
<b>Description:</b> View of the E194 & U181 right-of-way off Echo Avenue, facing northwest. Structures 19 on the E194 & U181 Lines are indicated by the arrows.		
		



# Photographic Log

**Client:** Eversource Energy  
E194 & U181 Structure Replacement Project  
**Site:** Portsmouth and Newington, NH

**Job Number:** 14-5034-200





# Photographic Log

**Client:** Eversource Energy **Job Number:** 14-5034-200  
E194 & U181 Structure Replacement Project  
**Site:** Portsmouth and Newington, NH

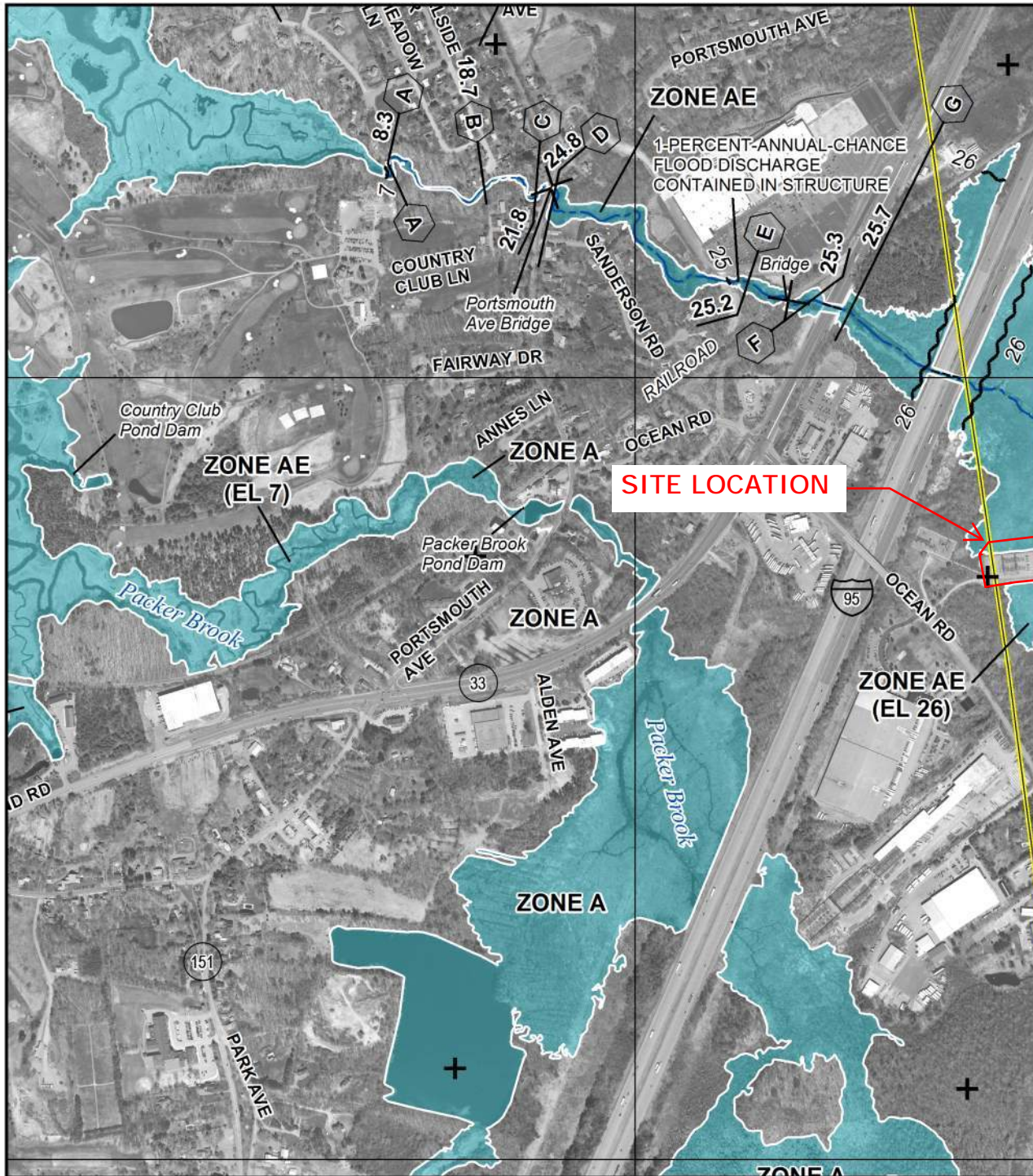
<b>Photograph No.:</b> 9	<b>Date:</b> 12/21/2022	<b>Direction Taken:</b> East
<b>Description:</b> View of the E194 & U181 right-of-way adjacent to Borthwick Avenue, facing east. Structure 40 on the U181 Line is indicated by the arrow.		
		

<b>Photograph No.:</b> 10	<b>Date:</b> 1/4/2023	<b>Direction Taken:</b> Southeast
<b>Description:</b> View of the E194 & U181 right-of-way adjacent to the Newington Substation off Gosling Road, facing southeast.		
		



**Tighe&Bond**

**APPENDIX F**



Map Projection:  
 NAD 1983 StatePlane New Hampshire FIPS 2800  
 Western Hemisphere; Vertical Datum: NAVD 88

**1 inch = 1,000 feet**

0 1,000 2,000

**FEMA**

**National Flood Insurance Program**

**NATIONAL FLOOD INSURANCE PROGRAM**  
**FLOOD INSURANCE RATE MAP**

**ROCKINGHAM COUNTY, NEW HAMPSHIRE**  
 (All Jurisdictions)

PANEL 265 OF 681

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENLAND, TOWN OF	330210	0265	F
NEWINGTON, TOWN OF	330229	0265	F
NORTH HAMPTON, TOWN OF	330232	0265	F
PORTSMOUTH, CITY OF	330139	0265	F
RYE, TOWN OF	330141	0265	F
STRATHAM, TOWN OF	330197	0265	F

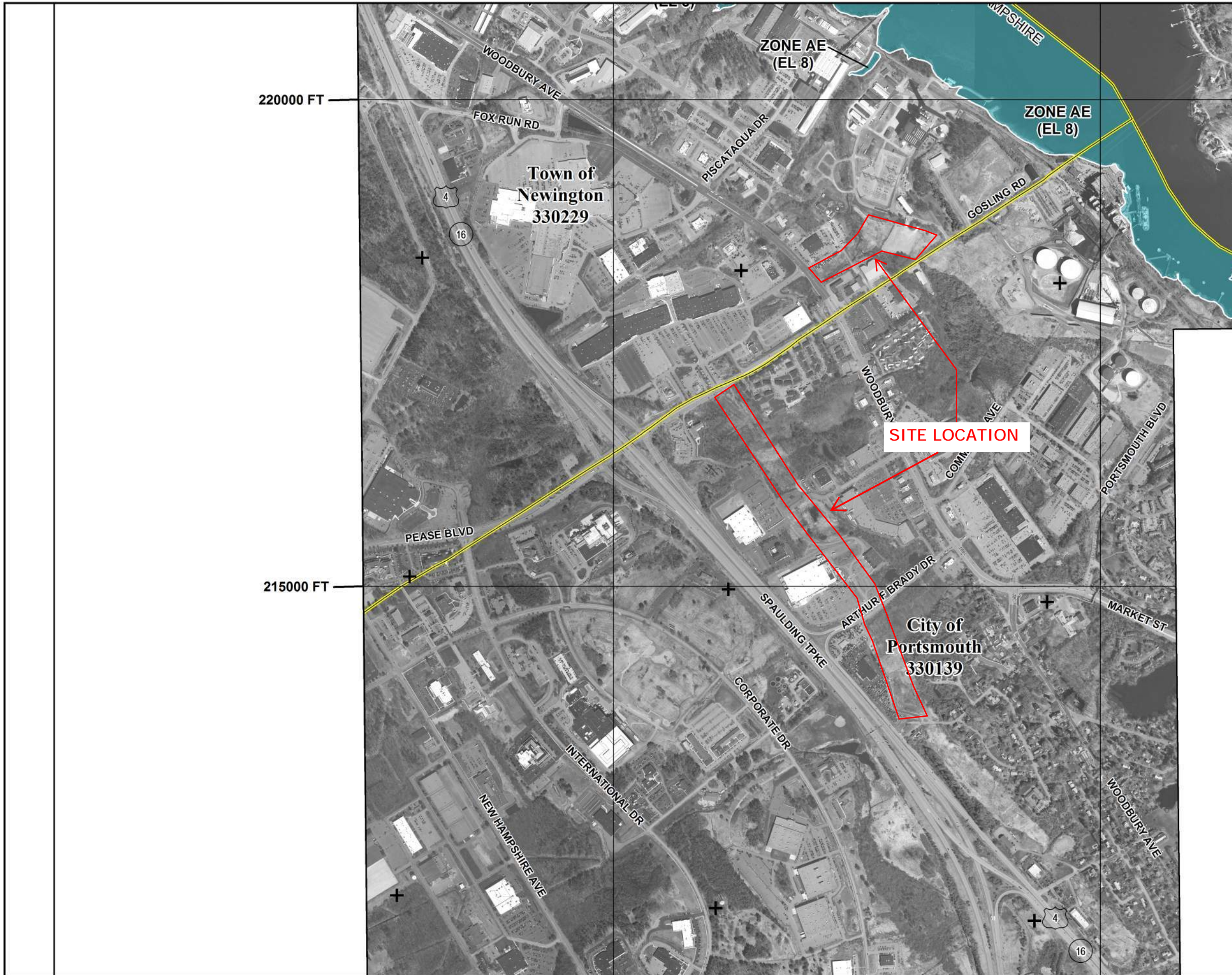
VERSION NUMBER  
2.3.2.1

MAP NUMBER  
33015C0265F

MAP REVISED  
January 29, 2021

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.





**SCALE**

Map Projection:  
NAD 1983 StatePlane New Hampshire FIPS 28  
Western Hemisphere; Vertical Datum: NAVD 88

**1 inch = 1,000 feet**

0 1,000 2,000

**FEMA**

National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP

**ROCKINGHAM COUNTY, NEW HAMPSHIRE**  
(All Jurisdictions)

PANEL 260 OF 681

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEWINGTON, TOWN OF	330229	0260	F
PORTSMOUTH, CITY OF	330139	0260	F

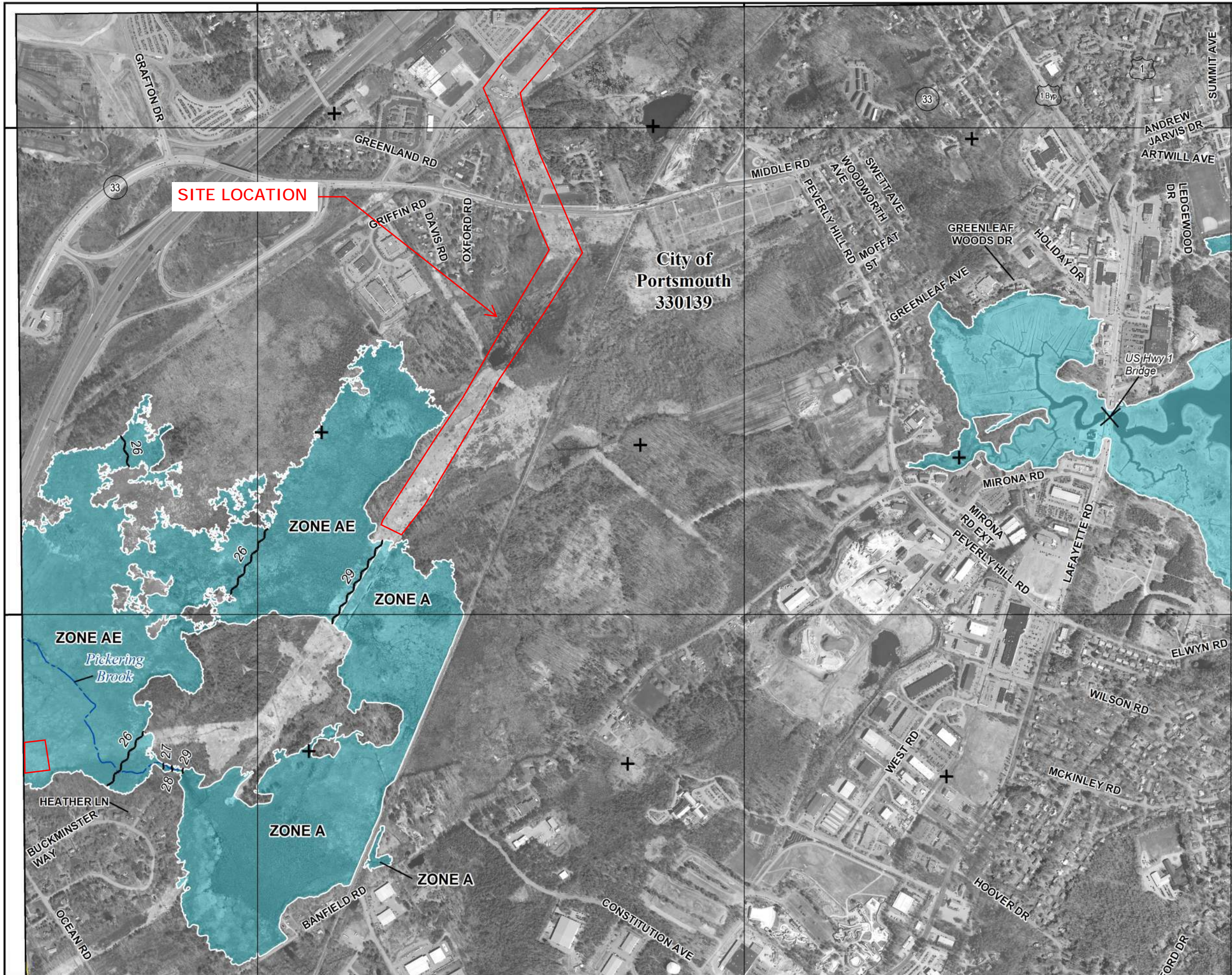
VERSION NUMBER  
2.3.2.1

MAP NUMBER  
33015C0260F

MAP REVISED  
January 29, 2021

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.





### SCALE

Map Projection:  
 NAD 1983 StatePlane New Hampshire FIPS 28  
 Western Hemisphere; Vertical Datum: NAVD 88

**1 inch = 1,000 feet**

0 1,000 2,000

**FEMA**

**National Flood Insurance Program**

**NATIONAL FLOOD INSURANCE PROGRAM**  
 FLOOD INSURANCE RATE MAP

**ROCKINGHAM COUNTY, NEW HAMPSHIRE**  
 (All Jurisdictions)

PANEL 270 OF 681

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
GREENLAND, TOWN OF	330210	0270	F
NORTH HAMPTON, TOWN OF	330232	0270	F
PORTSMOUTH, CITY OF	330139	0270	F
RYE, TOWN OF	330141	0270	F

VERSION NUMBER  
2.3.2.1

MAP NUMBER  
33015C0270F

MAP REVISED  
January 29, 2021

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



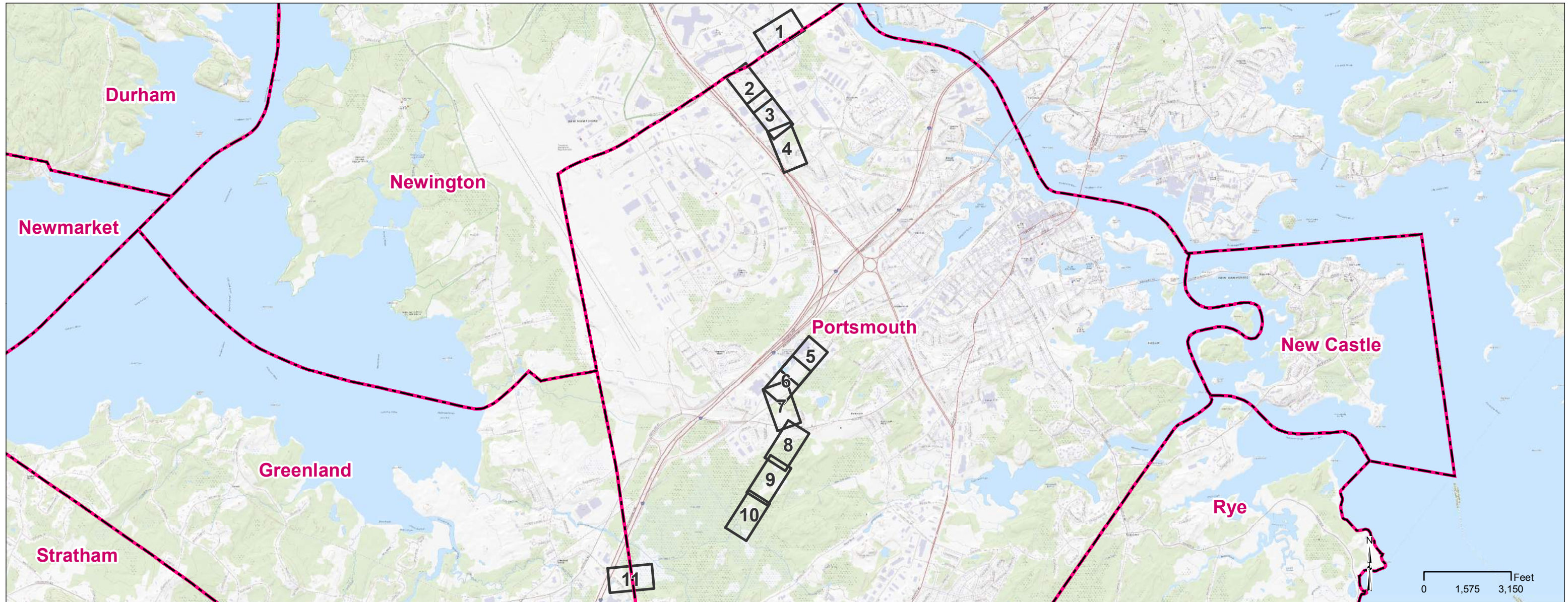
**Tighe&Bond**

**APPENDIX G**

# Line E194 and U181 Structure Replacement Project

## NEWINGTON AND PORTSMOUTH, NEW HAMPSHIRE Environmental Resources Map

Date: July 10, 2023



PREPARED FOR:

**EVERSOURCE**

13 Legends Drive  
Hooksett, NH 03106

### Legend

- Map Index
- Municipal Boundary

### INDEX OF FIGURES

Title Sheet / Index Map  
Map Sheets 1-11

PREPARED BY:

**Tighe&Bond**

53 Southampton Road  
Westfield, MA 01085



CONSTRUCTION SEQUENCE:

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY.
3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES
4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.
5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.
6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. MATTED ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH, UPLAND ROUTES SHOULD BE APPROXIMATELY 16-FEET WIDE.
7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE SWAMP MATSWHERE REQUIRED. NO ADDITIONAL CLEARING IS PERMITTED.
8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATION IS NEEDED FOR ACCESS.
9. TIMBER MATS WILL BE USED ALONG ACCESS ROUTES WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.
10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC UNDER MATS OR USING A LAYER OF RUNNER MATS TO ELEVATE MATS TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.
11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.
12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE INSTALLATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE AND DISPOSED OF UPLAND.
13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. IMPORTATION OF COMMERCIAL LOAM IS PROHIBITED.
14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.
15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.
16. ALL SWAMP MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.
17. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.
18. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION IF NEEDED. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.
19. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.
20. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.
21. WHERE PEATLANDS ARE MAPPED ADJACENT TO THE ROW, THE ASSOCIATED WETLANDS WITHIN THE ROW SHALL BE TREATED AS A PEATLAND AND PRIORITY RESOURCE AREA. ELEVATED MATTING SHALL BE USED AS NECESSARY TO PREVENT EXCESSIVE GROUND DISTURBANCE WITHIN THESE AREAS.

WINTER CONSTRUCTION NOTES

1. PROPOSED VEGETATION AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS

2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

GENERAL NOTES:

OWNER: PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE d/b/a EVERSOURCE ENERGY  
 13 LEGENDS DRIVE  
 HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. STANTEC PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.
2. JURISDICTIONAL WETLANDS WERE DELINEATED BY TIGHE & BOND IN 2023. WETLANDS WERE DELINEATED IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," JANUARY 2012.
3. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.
4. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
5. IN ACCORANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
  - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
  - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

EROSION CONTROL NOTES:

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.
2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.
3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.
4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED WITH BMPS.
5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.
6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

7. EROSION CONTROL MATTING, IF REQUIRED, WILL CONSIST OF JUTE MATTING. MATTING WITH WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD WILL BE AVOIDED TO LIMIT UNINTENTIONAL MORTALITY TO SNAKES OR OTHER SMALL ANIMALS.

WILDLIFE PROTECTION NOTES:

1. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHF&G AND BY EMAIL AT NHFGreview@wildlife.nh.gov, WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM "WILDLIFE SPECIES OBSERVATION".
2. PHOTOGRAPHS OF THE OBSERVED OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
3. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
4. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

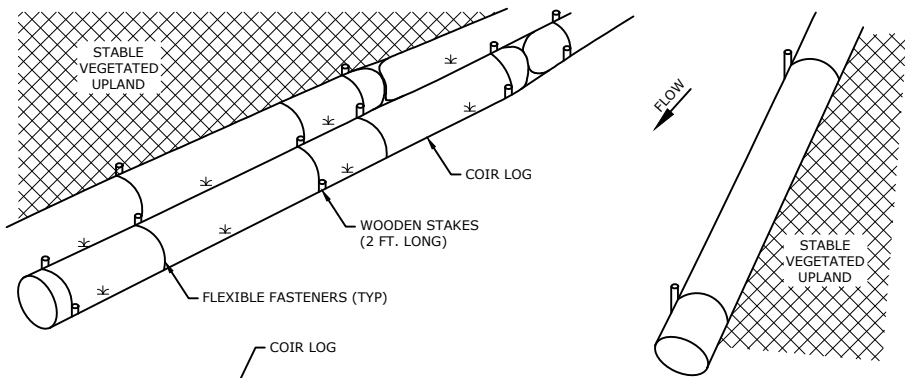
EVERSOURCE  
 NOTES & DETAILS

Line E194 and U181  
 Structure Replacement Project

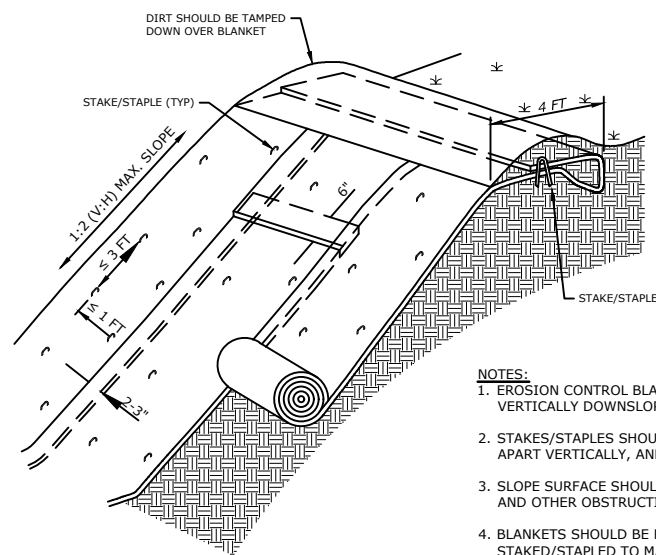
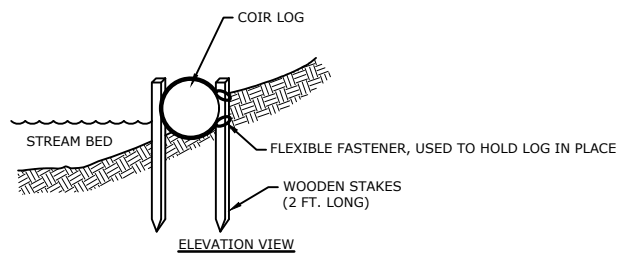
7/13/2023



FIGURE: Page 1

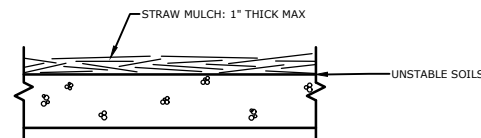
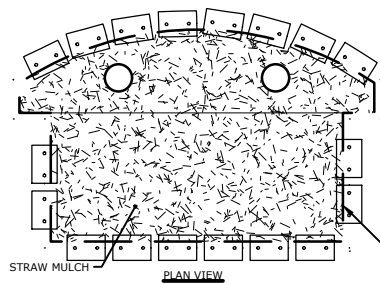


**COCONUT COIR LOG**  
NO SCALE



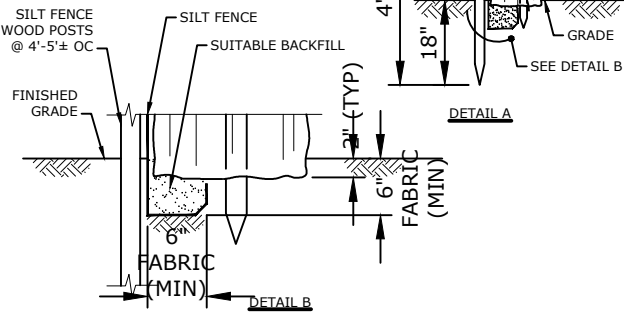
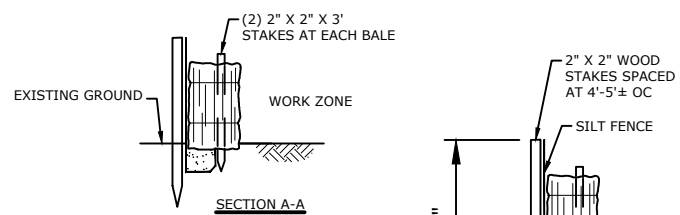
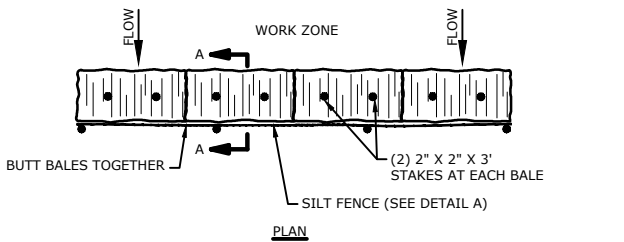
**EROSION CONTROL BLANKET**  
NO SCALE

- NOTES:**
1. EROSION CONTROL BLANKET SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.
  2. STAKES/STAPLES SHOULD BE PLACED NO MORE THAN 3 FT APART VERTICALLY, AND 1 FT APART HORIZONTALLY.
  3. SLOPE SURFACE SHOULD BE FREE OF STICKS, ROCKS, AND OTHER OBSTRUCTIONS.
  4. BLANKETS SHOULD BE ROLLED OUT LOOSELY AND STAKED/STAPLED TO MAINTAIN DIRECT SOIL CONTACT. DO NOT STRETCH THE BLANKETS.

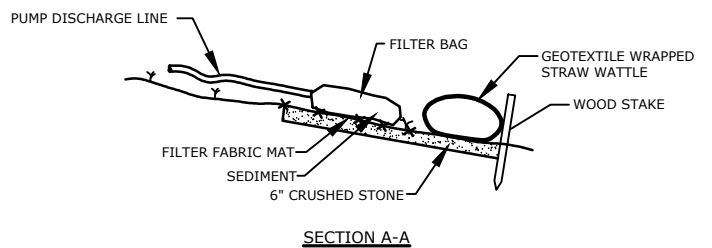
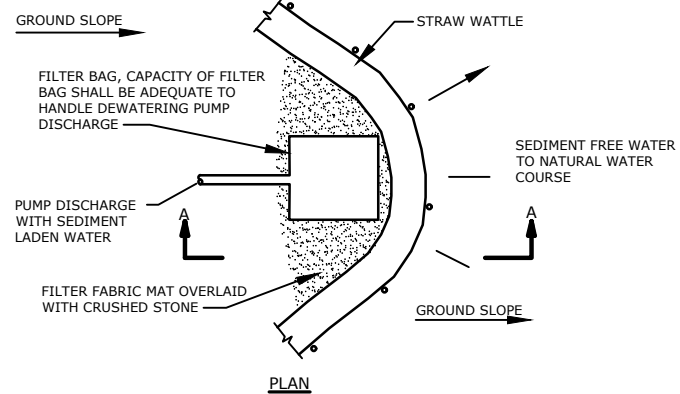


**TYPICAL MULCH APPLICATION**  
NO SCALE

- NOTES:**
1. STRAW PRODUCTS ONLY; THE USE OF HAY OR HAY PRODUCTS IS STRICTLY PROHIBITED.
  2. MULCH APPLICATION SHALL NOT EXCEED 1" IN THICKNESS.
  3. WOOD CHIPS MAY BE SUBSTITUTED FOR STRAW MULCH SUBJECT TO EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING APPROVAL.
  4. CONSULT WITH EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING FOR PROJECT SPECIFIC REQUIREMENTS.

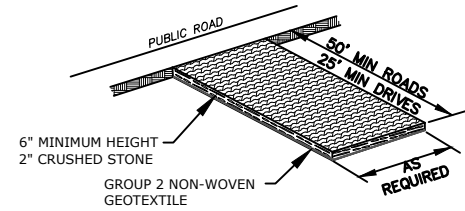


**STRAW BALES & SILTATION FENCE**  
NO SCALE



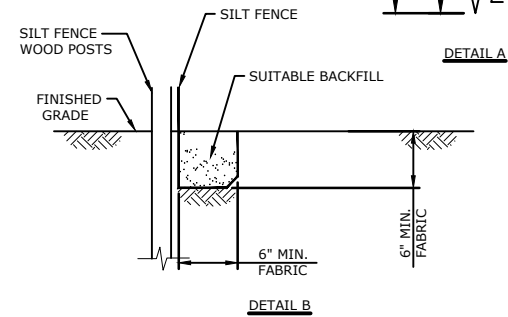
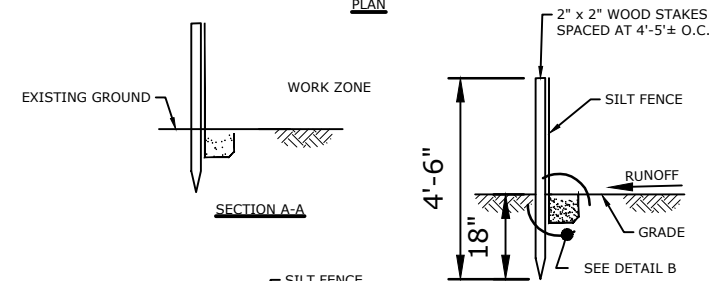
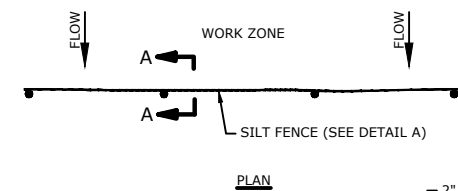
**SEDIMENT TRAP**  
NO SCALE

- NOTES:**
1. GEOTEXTILE BAG MATERIALS BASED ON PARTICLE SIZE IN PUMPED WATER, I.W., FOR COARSE PARTICLES IN WOVEN MATERIAL; FOR SILTS/CLAYS A NON-WOVEN MATERIAL.
  2. DO NOT OVER PRESSURIZE BAG OR USE BEYOND CAPACITY.
  3. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
  4. DOWNGRADIENT FROM RECEIVING AREAS MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION. E.G., FOREST FLOOR OR COARSE GRAVEL/STONE.
  5. DISCHARGE LOCATION SHALL MEET ALL REGULATORY SETBACKS FROM WETLANDS AND OTHER WATER COURSES.



- NOTES:**
1. REMOVE FOLLOWING CONSTRUCTION.

**TEMPORARY CONSTRUCTION ENTRY PAD**  
NO SCALE



**SILTATION FENCE**  
NO SCALE

**EVSOURCE**  
**NOTES & DETAILS**

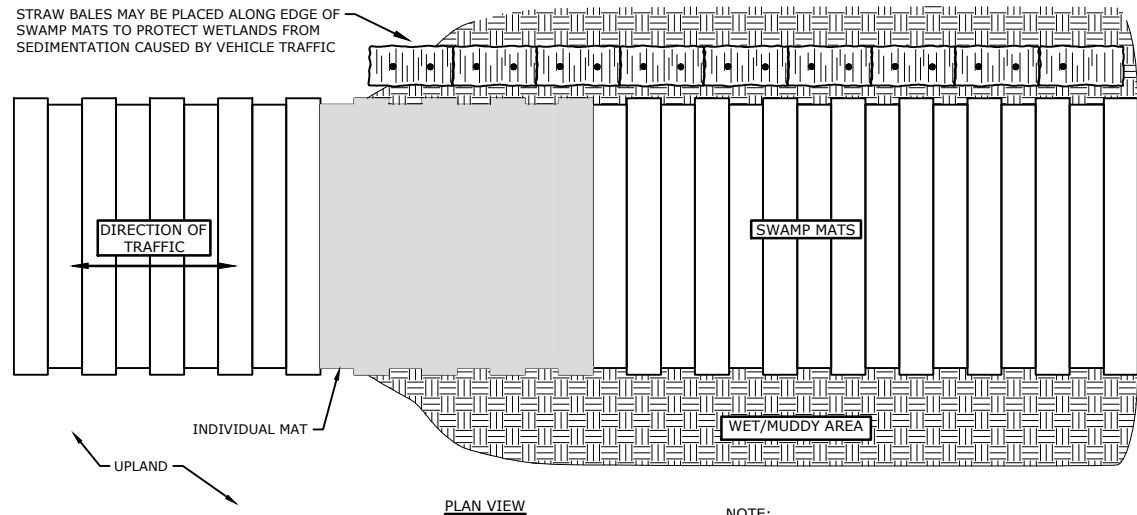
**Line E194 and U181**  
**Structure Replacement Project**

DATE: 7/10/2023

SCALE:

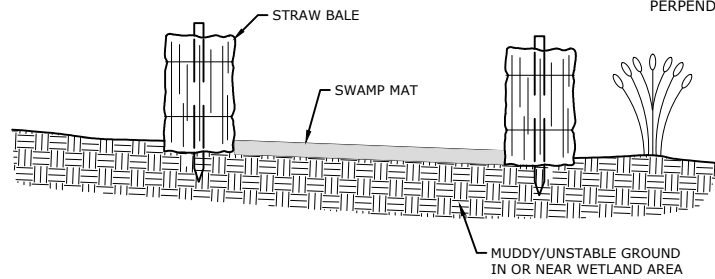
FIGURE: Page 2

**Tighe & Bond**



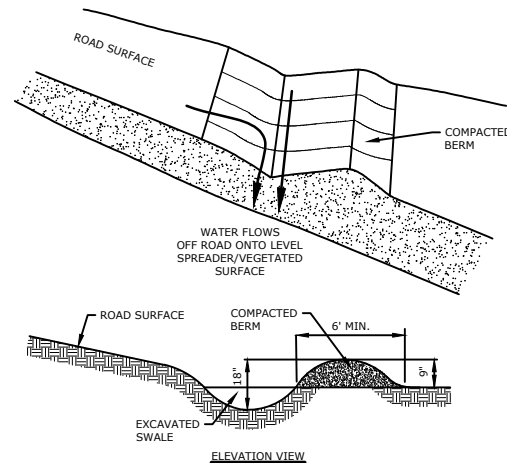
PLAN VIEW

NOTE:  
PLACE SWAMP MATS SO PLANKS ARE PERPENDICULAR TO DIRECTION OF TRAFFIC.



ELEVATION VIEW

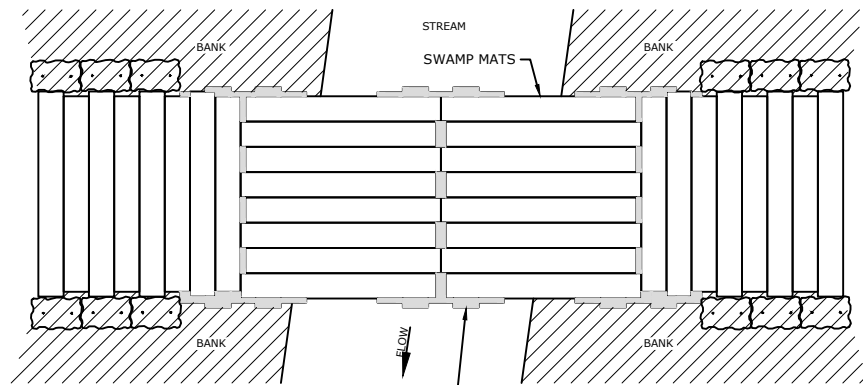
**TYPICAL SWAMP MAT**  
NO SCALE



ELEVATION VIEW

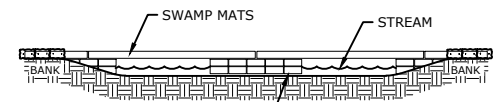
**ROAD RUNOFF DIVERSION WATER BARS**  
NO SCALE

NOTE:  
FILL FOR BERMS SHALL BE A COMBINATION OF GRAVEL, SAND AND SILT TO ENSURE WATER TIGHTNESS AND STABILITY.



PLAN VIEW

SWAMP MATS SECTIONS USED FOR 'BRIDGE' SUPPORTS IN STREAM



ELEVATION VIEW

SWAMP MATS SECTIONS USED FOR 'BRIDGE' SUPPORTS IN STREAM

**TYPICAL SWAMP MAT BRIDGE FOR TEMPORARY STREAM CROSSING**  
NO SCALE

- NOTES:
1. SWAMP MATS SHOULD BE PLACED CLOSELY TOGETHER SO THERE ARE NO GAPS BETWEEN EACH MAT SECTION.
  2. ADDITIONAL MEASURES MAY BE REQUIRED.

EVERSOURCE  
NOTES & DETAILS

Line E194 and U181  
Structure Replacement Project

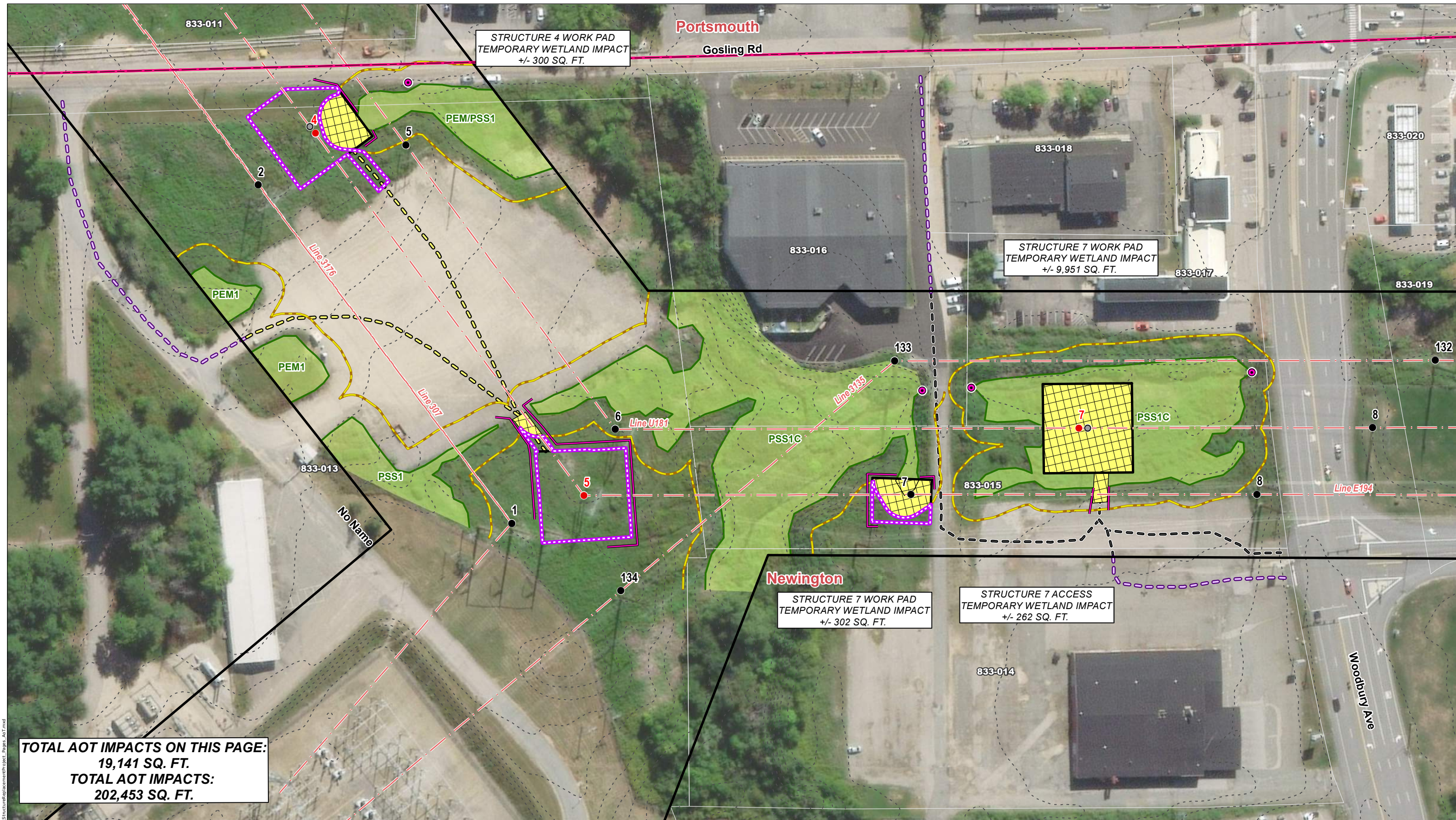
DATE: 7/10/2023

SCALE:

FIGURE: Page 3

**Tighe&Bond**





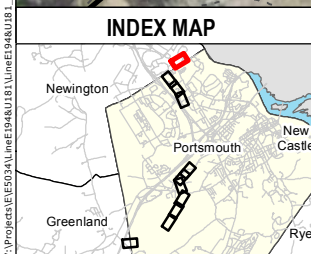
STRUCTURE 4 WORK PAD  
TEMPORARY WETLAND IMPACT  
+/- 300 SQ. FT.

STRUCTURE 7 WORK PAD  
TEMPORARY WETLAND IMPACT  
+/- 9,951 SQ. FT.

STRUCTURE 7 WORK PAD  
TEMPORARY WETLAND IMPACT  
+/- 302 SQ. FT.

STRUCTURE 7 ACCESS  
TEMPORARY WETLAND IMPACT  
+/- 262 SQ. FT.

**TOTAL AOT IMPACTS ON THIS PAGE:**  
19,141 SQ. FT.  
**TOTAL AOT IMPACTS:**  
202,453 SQ. FT.



- Legend**
- Proposed Structure
  - Existing Structure to be Modified
  - Existing Structure to be Removed
  - Existing Structure
  - Gate
  - Culvert
  - Existing Access
  - Proposed Access
  - Off-ROW Access Pending Rights
  - Railroad
  - Contour Line (2 Ft.)
  - Fence
  - Overhead Eversource Line
  - Distribution Line
  - Stonewall
  - Sediment Control Barrier
  - 25' Wetland Buffer (Newington)
  - 100' Buffer Zone (Portsmouth)
  - Existing Right-of-Way
  - Municipal Boundary
  - Delineated Intermittent Watercourse
  - Delineated Wetland Boundary Outline
  - Field Delineated Wetland\*
  - Parcel Boundary
  - Work Pad
  - 100 Year Flood Zone
  - Wellhead Protection Areas
  - Alteration of Terrain

**Map Notes:**  
Data valid as of July 2023.  
Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.  
Contours downloaded from New Hampshire GRANIT  
Parcels provided by New Hampshire GRANIT  
Figure intended to be printed on 11x17  
\*Indicates datasets with a transparency setting of 30-70%  
This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.

1 inch = 100 feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

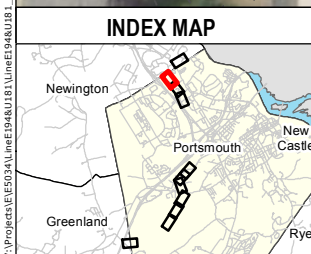
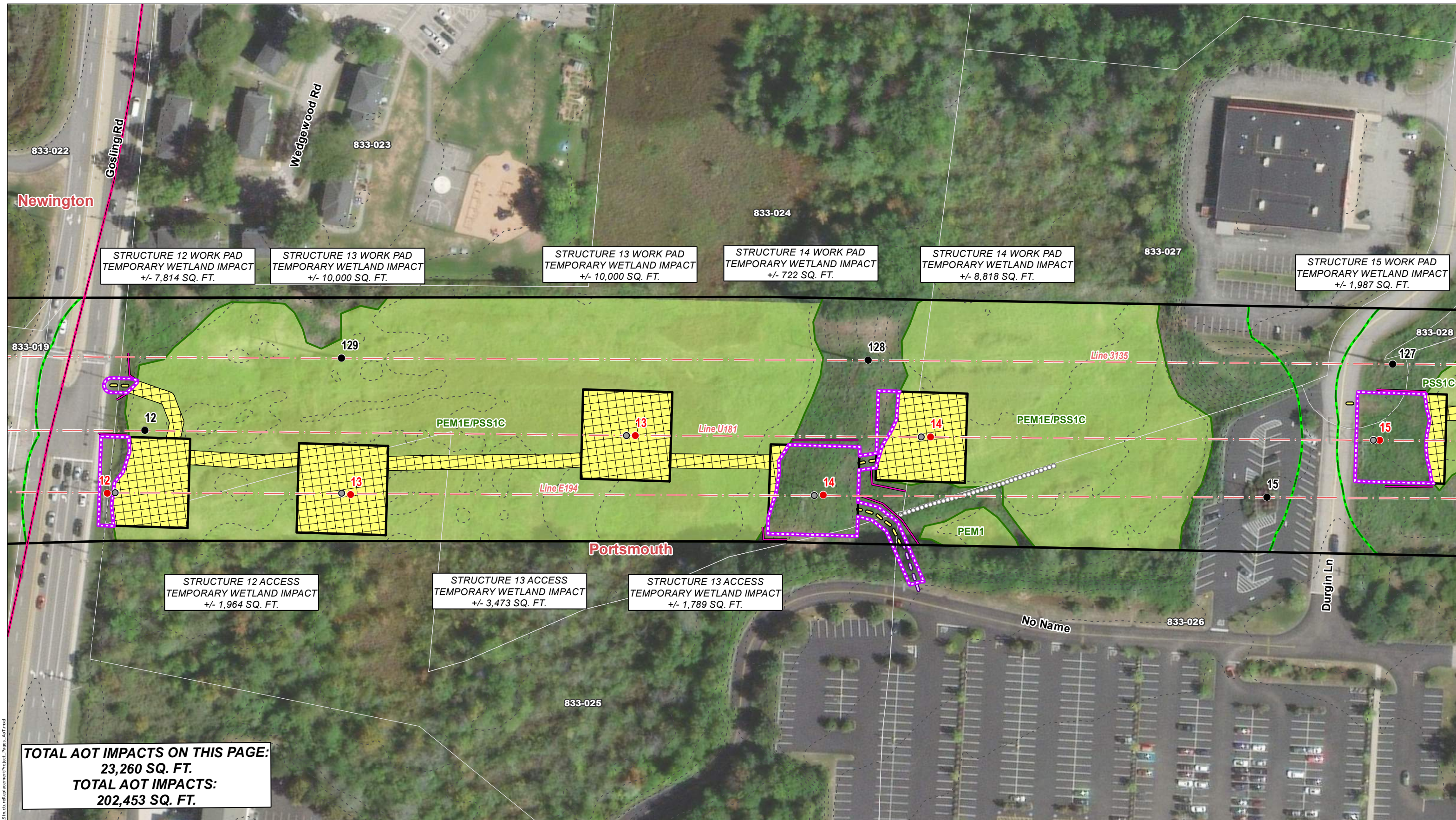
Portsmouth, New Hampshire

Date: July 10, 2023

Map Sheet 1 of 11

**Tighe & Bond**





- Legend**
- Proposed Structure
  - Existing Structure to be Modified
  - Existing Structure to be Removed
  - Existing Structure
  - Gate
  - Culvert
  - Existing Access
  - ▭ Proposed Access
  - ▭ Off-ROW Access Pending Rights
  - ▭ Sediment Control Barrier
  - ▭ 25' Wetland Buffer (Newington)
  - ▭ 100' Buffer Zone (Portsmouth)
  - ▭ Existing Right-of-Way
  - ▭ Municipal Boundary
  - ▭ Delineated Intermittent Watercourse
  - ▭ Delineated Wetland Boundary Outline
  - ▭ Field Delineated Wetland\*
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  - ▭ Work Pad
  - ▭ 100 Year Flood Zone
  - ▭ Wellhead Protection Areas
  - ▭ Alteration of Terrain

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1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

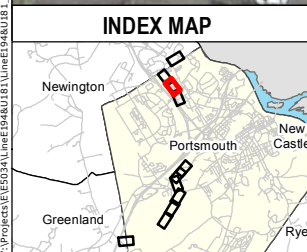
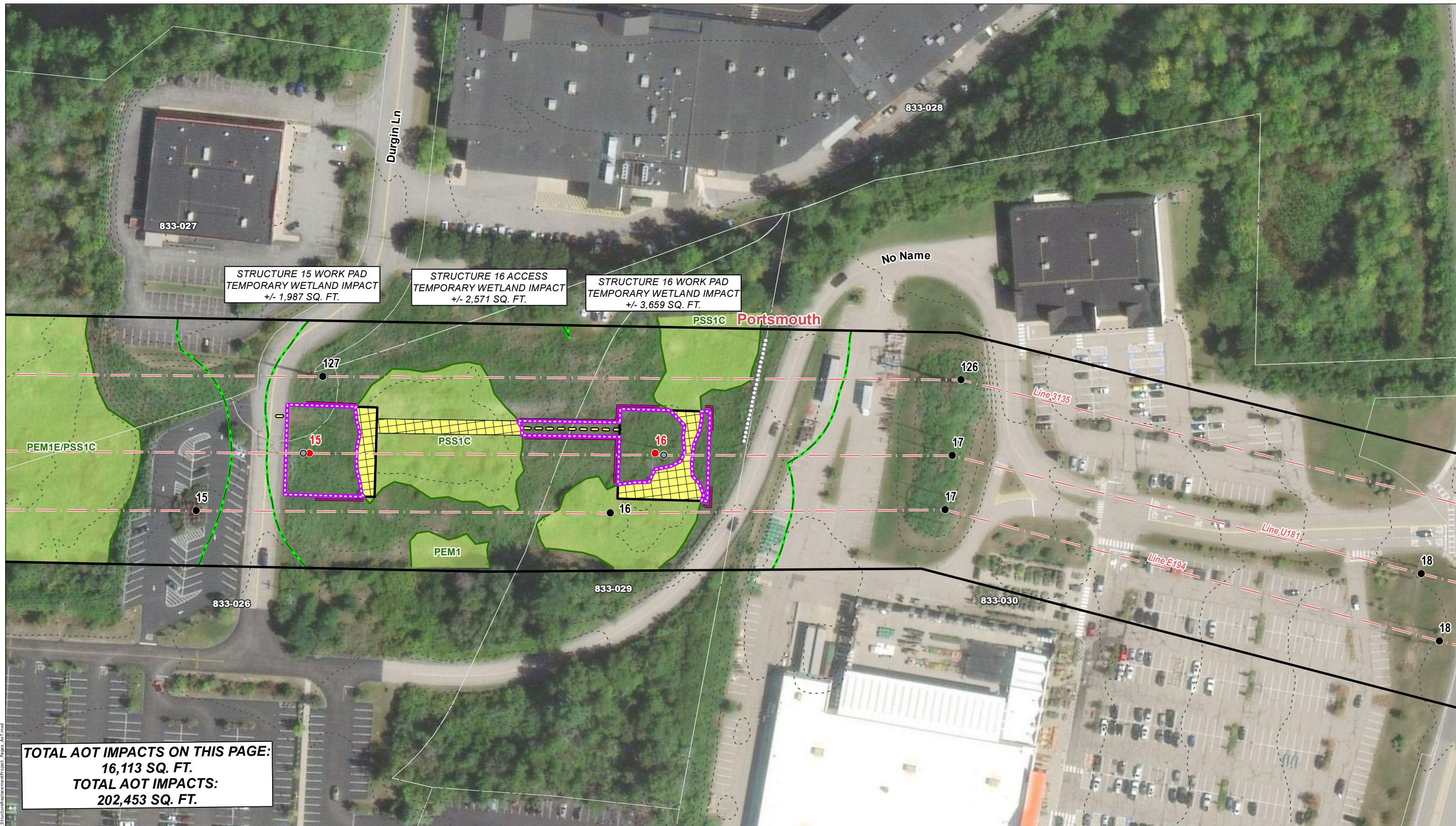
Portsmouth, New Hampshire

Date: July 10, 2023

Map Sheet 2 of 11

**Tighe & Bond**





**Legend**

● Proposed Structure	— Proposed Access	○ Stonewall	— Delineated Wetland Boundary Outline
● Existing Structure to be Modified	— Off-ROW Access Pending Rights	— Sediment Control Barrier	— Field Delineated Wetland*
● Existing Structure to be Removed	— Railroad	— 25' Wetland Buffer (Newington)	— Parcel Boundary
● Existing Structure	— Contour Line (2 Ft.)	— 100' Buffer Zone (Portsmouth)	— Work Pad
● Gate	— X=X Fence	— Existing Right-of-Way	— 100 Year Flood Zone
● Culvert	— Overhead Eversource Line	— Municipal Boundary	— Wellhead Protection Areas
— Existing Access	— Distribution Line	— Delineated Intermittent Watercourse	— Alteration of Terrain

**Map Notes:**  
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Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.

Contours downloaded from New Hampshire GRANIT  
Parcels provided by New Hampshire GRANIT  
Figure intended to be printed on 11x17

\*Indicates datasets with a transparency setting of 30-70%

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1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

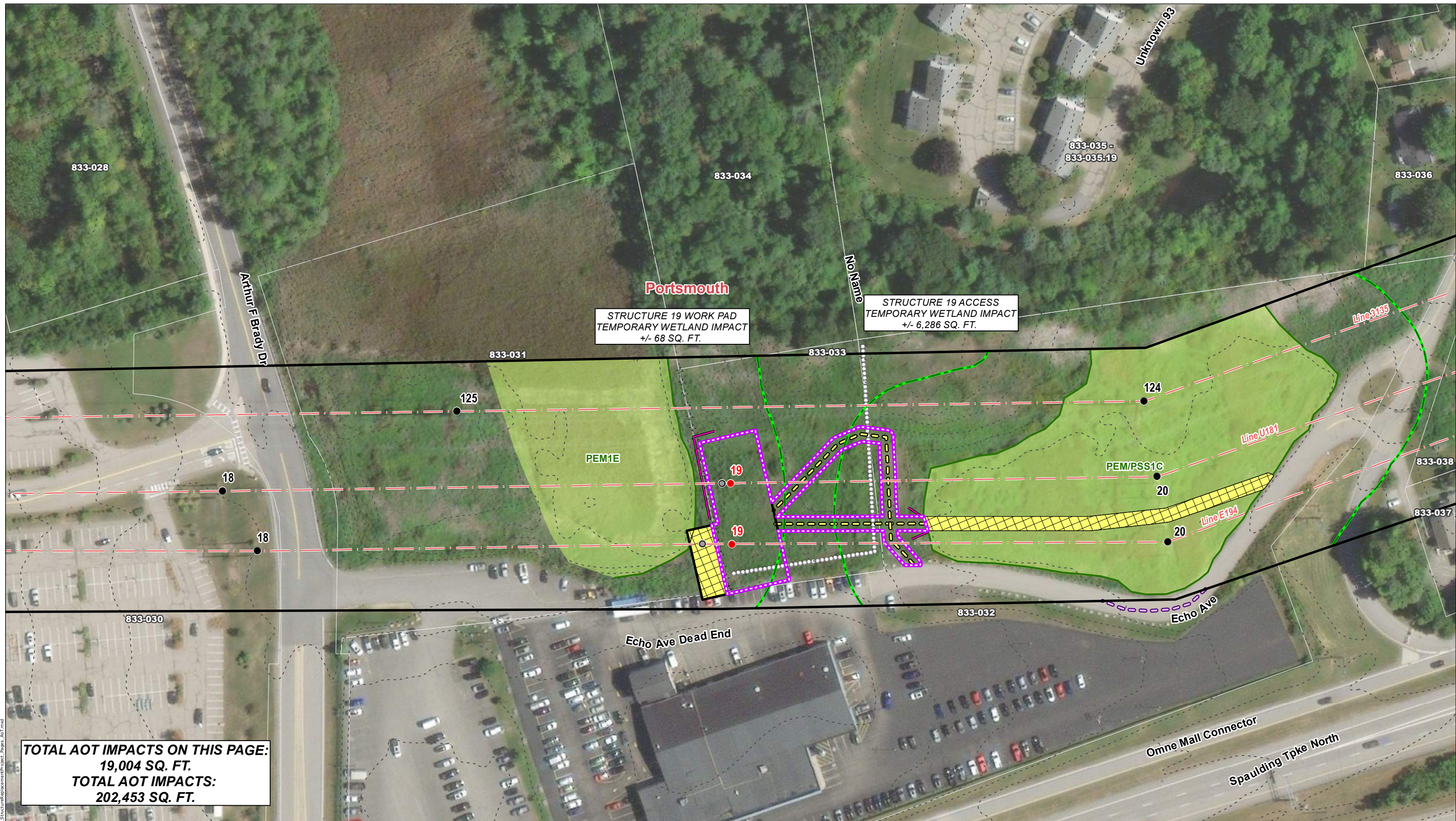
Portsmouth, New Hampshire

Date: July 10, 2023

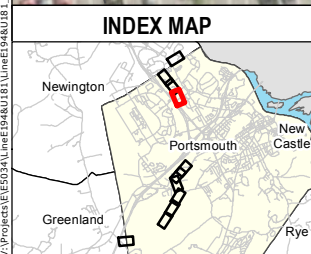
Map Sheet 3 of 11

**Tighe & Bond**



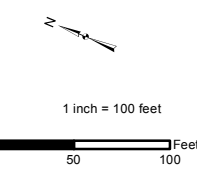


**TOTAL AOT IMPACTS ON THIS PAGE:**  
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**TOTAL AOT IMPACTS:**  
**202,453 SQ. FT.**



Legend	
● Proposed Structure	— Proposed Access
● Existing Structure to be Modified	— Off-ROW Access Pending Rights
● Existing Structure to be Removed	— Railroad
● Existing Structure	— Contour Line (2 Ft.)
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— Work Pad	— 100 Year Flood Zone
— Wellhead Protection Areas	— Alteration of Terrain

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NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
 Structure Replacement Project**

Portsmouth, New Hampshire

Date: July 10, 2023

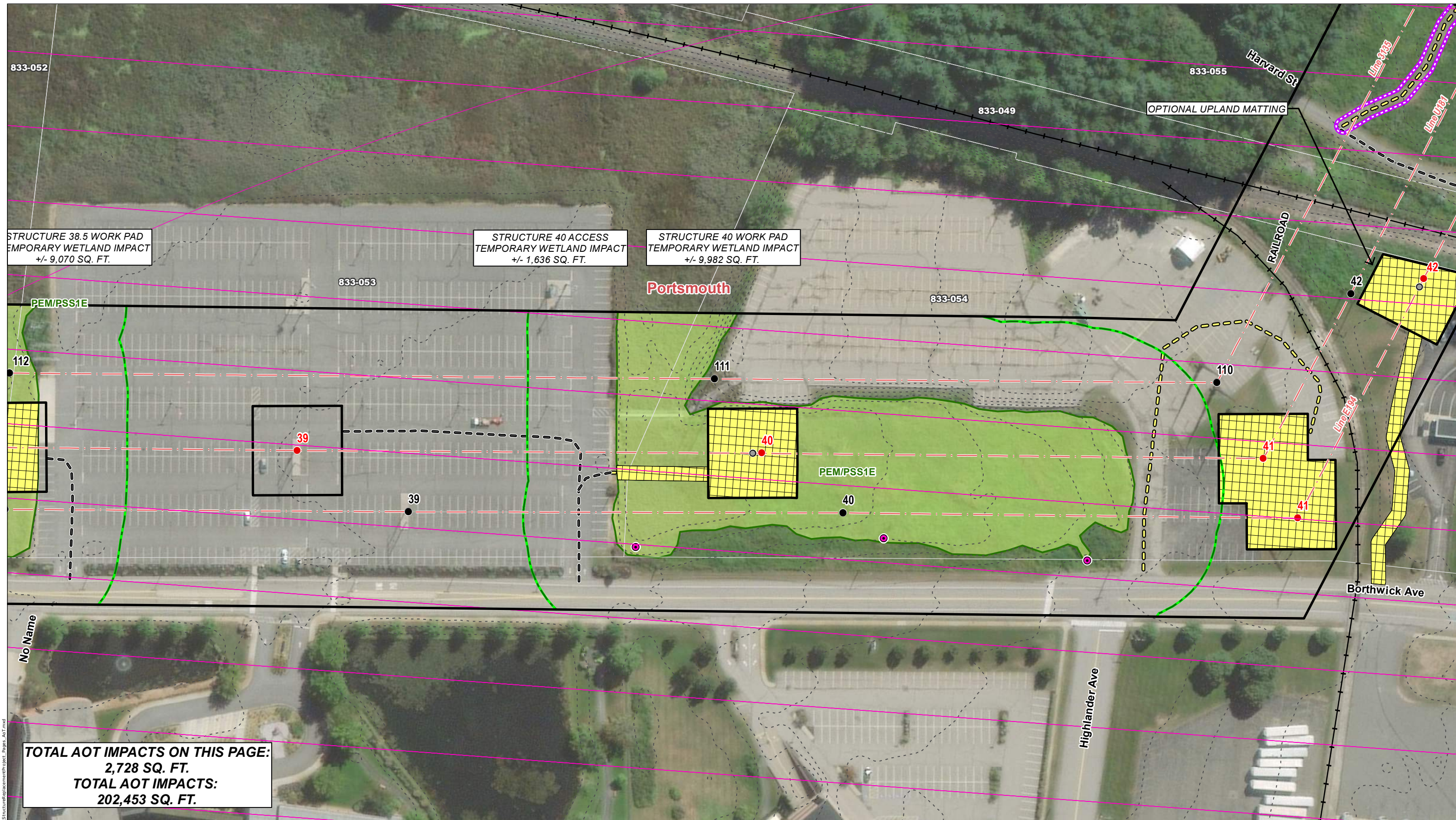
Map Sheet 4 of 11

**Tighe & Bond**

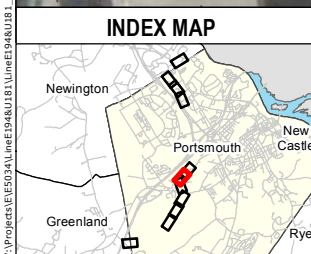








**TOTAL AOT IMPACTS ON THIS PAGE:**  
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**TOTAL AOT IMPACTS:**  
202,453 SQ. FT.



- Legend**
- Proposed Structure
  - Existing Structure to be Modified
  - Existing Structure to be Removed
  - Existing Structure
  - Gate
  - Culvert
  - Existing Access
  - Proposed Access
  - Off-ROW Access Pending Rights
  - Railroad
  - Contour Line (2 Ft.)
  - Fence
  - Overhead Eversource Line
  - Distribution Line
  - Stonewall
  - Sediment Control Barrier
  - 25' Wetland Buffer (Newington)
  - 100' Buffer Zone (Portsmouth)
  - Existing Right-of-Way
  - Municipal Boundary
  - Delineated Intermittent Watercourse
  - Delineated Wetland Boundary Outline
  - Field Delineated Wetland\*
  - Parcel Boundary
  - Work Pad
  - 100 Year Flood Zone
  - Wellhead Protection Areas
  - Alteration of Terrain

**Map Notes:**  
Data valid as of July 2023.  
Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.  
Contours downloaded from New Hampshire GRANIT  
Parcels provided by New Hampshire GRANIT  
Figure intended to be printed on 11x17  
\*Indicates datasets with a transparency setting of 30-70%  
This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.

1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

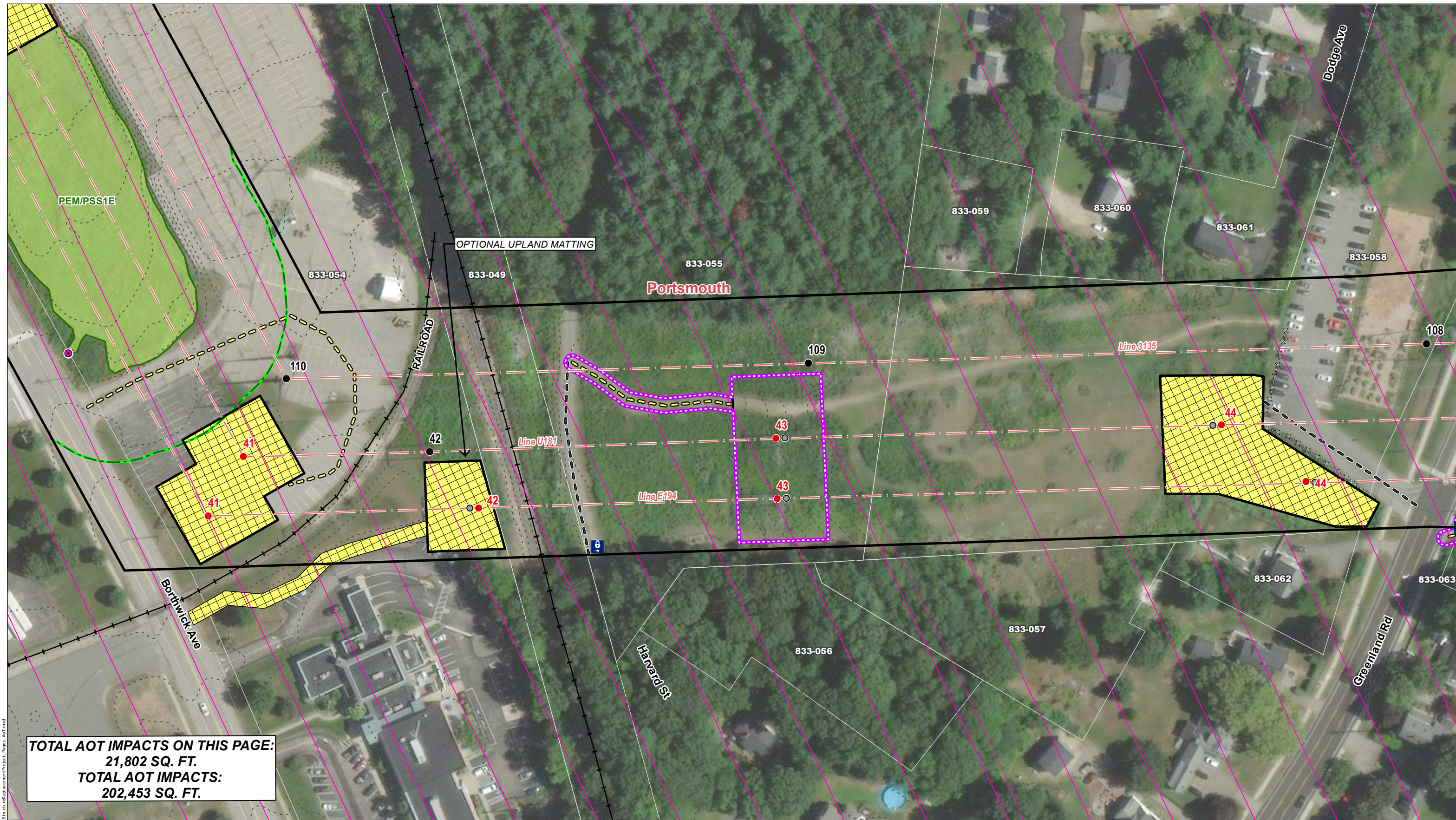
Portsmouth, New Hampshire

Date: July 10, 2023

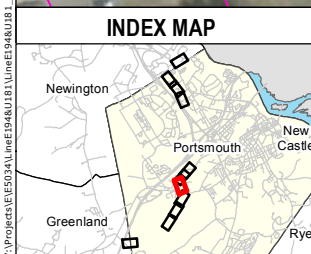
Map Sheet 6 of 11

**Tighe & Bond**



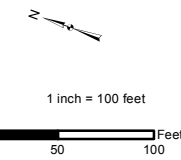


**TOTAL AOT IMPACTS ON THIS PAGE:**  
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**TOTAL AOT IMPACTS:**  
**202,453 SQ. FT.**



- Legend**
- Proposed Structure
  - Existing Structure to be Modified
  - Existing Structure to be Removed
  - Existing Structure
  - Ⓜ Gate
  - Culvert
  - Existing Access
  - Proposed Access
  - Off-ROW Access Pending Rights
  - Railroad
  - Contour Line (2 Ft.)
  - Fence
  - Overhead Eversource Line
  - Distribution Line
  - Stonewall
  - Sediment Control Barrier
  - 25' Wetland Buffer (Newington)
  - 100' Buffer Zone (Portsmouth)
  - Existing Right-of-Way
  - Municipal Boundary
  - Delineated Intermittent Watercourse
  - Delineated Wetland Boundary Outline
  - Field Delineated Wetland\*
  - Parcel Boundary
  - Work Pad
  - 100 Year Flood Zone
  - Wellhead Protection Areas
  - Alteration of Terrain

**Map Notes:**  
 Data valid as of July 2023.  
 Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.  
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NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
 Structure Replacement Project**

Portsmouth, New Hampshire

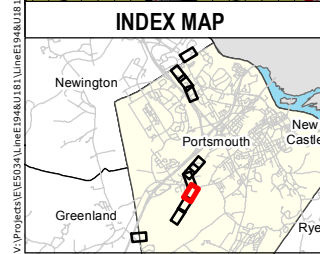
Date: July 10, 2023

Map Sheet 7 of 11

**Tighe & Bond**

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**Legend**

● Proposed Structure	— Proposed Access	○ Stonewall	— Delineated Wetland Boundary Outline
● Existing Structure to be Modified	— Off-ROW Access Pending Rights	— Sediment Control Barrier	— Field Delineated Wetland*
● Existing Structure to be Removed	— Railroad	— 25' Wetland Buffer (Newington)	— Parcel Boundary
● Existing Structure	— Contour Line (2 Ft.)	— 100' Buffer Zone (Portsmouth)	— Work Pad
— Gate	— X=X Fence	— Existing Right-of-Way	— 100 Year Flood Zone
— Culvert	— Overhead Eversource Line	— Municipal Boundary	— Wellhead Protection Areas
— Existing Access	— Distribution Line	— Delineated Intermittent Watercourse	— Alteration of Terrain

**Map Notes:**  
Data valid as of July 2023.  
Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.  
Contours downloaded from New Hampshire GRANIT  
Parcels provided by New Hampshire GRANIT  
Figure intended to be printed on 11x17  
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1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

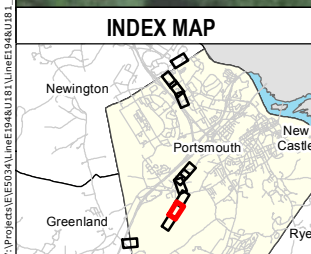
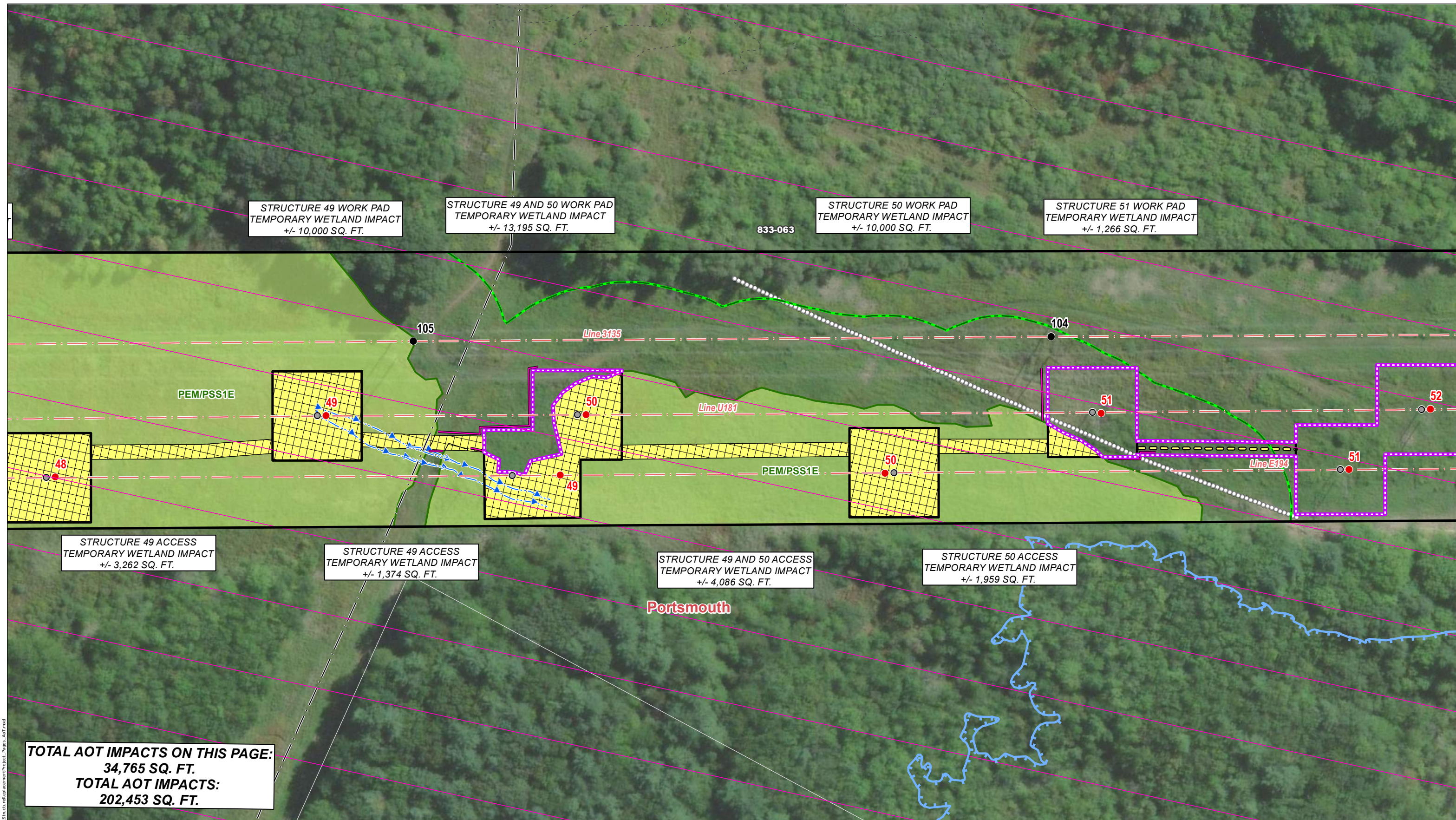
Portsmouth, New Hampshire

Date: July 10, 2023

Map Sheet 8 of 11

**Tighe & Bond**





Legend	
● Proposed Structure	— Proposed Access
● Existing Structure to be Modified	— Off-ROW Access Pending Rights
● Existing Structure to be Removed	— Railroad
● Existing Structure	--- Contour Line (2 Ft.)
Ⓜ Gate	✕=✕ Fence
Ⓜ Culvert	— Overhead Eversource Line
— Existing Access	— Distribution Line
Ⓜ Stonewall	— Sediment Control Barrier
— 25' Wetland Buffer (Newington)	— 100' Buffer Zone (Portsmouth)
— Existing Right-of-Way	— Municipal Boundary
— Delineated Intermittent Watercourse	— Delineated Wetland Boundary Outline
— Field Delineated Wetland*	— Parcel Boundary
— Work Pad	— 100 Year Flood Zone
— Wellhead Protection Areas	— Alteration of Terrain

**Map Notes:**  
 Data valid as of July 2023.  
 Data source: New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT) and USFWS. Orthophotography courtesy of ESRI.  
 Contours downloaded from New Hampshire GRANIT  
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1 inch = 100 feet

0 50 100 Feet

NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

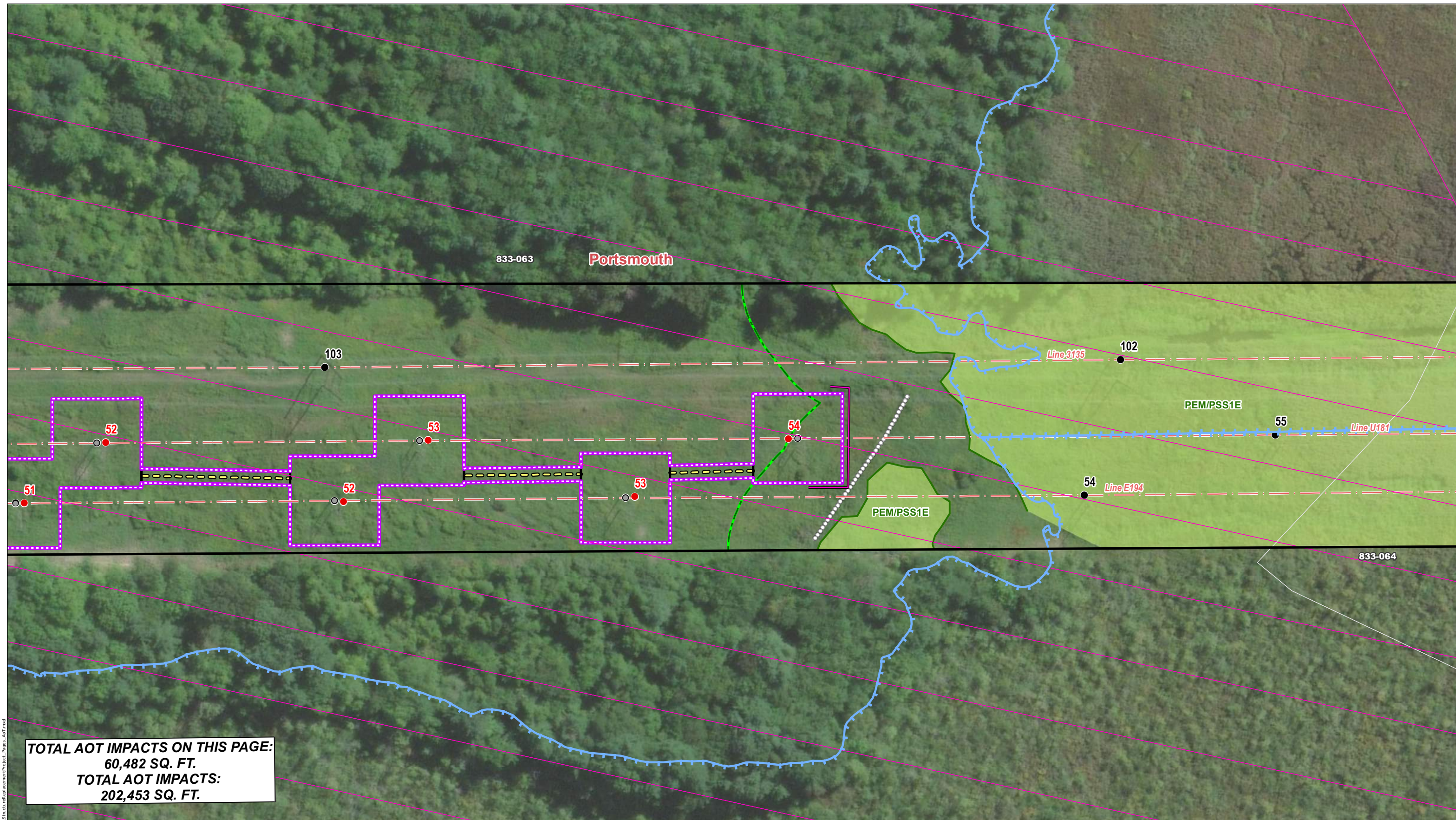
Portsmouth, New Hampshire

Date: July 10, 2023

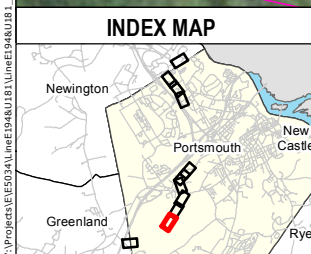
Map Sheet 9 of 11

**Tighe & Bond**



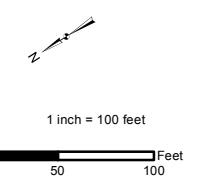


**TOTAL AOT IMPACTS ON THIS PAGE:**  
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**TOTAL AOT IMPACTS:**  
**202,453 SQ. FT.**



Legend	
● Proposed Structure	— Proposed Access
● Existing Structure to be Modified	— Off-ROW Access Pending Rights
● Existing Structure to be Removed	— Railroad
● Existing Structure	--- Contour Line (2 Ft.)
Ⓜ Gate	✕=✕ Fence
Ⓜ Culvert	— Overhead Eversource Line
— Existing Access	— Distribution Line
Ⓜ Stonewall	— Sediment Control Barrier
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	— Parcel Boundary
	— Work Pad
	— 100 Year Flood Zone
	— Wellhead Protection Areas
	— Alteration of Terrain

**Map Notes:**  
 Data valid as of July 2023.  
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NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
 Structure Replacement Project**

Portsmouth, New Hampshire

Date: July 10, 2023

Map Sheet 10 of 11

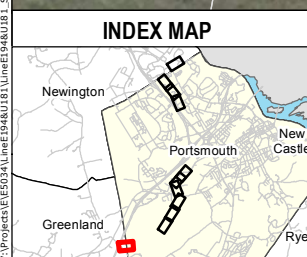
**Tighe & Bond**

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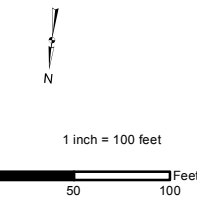


**TOTAL AOT IMPACTS ON THIS PAGE:**  
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**TOTAL AOT IMPACTS:**  
202,453 SQ. FT.



Legend	
● Proposed Structure	— Proposed Access
● Existing Structure to be Modified	— Off-ROW Access Pending Rights
● Existing Structure to be Removed	— Railroad
● Existing Structure	— Contour Line (2 Ft.)
Ⓜ Gate	ⓧ=ⓧ Fence
Ⓜ Culvert	— Overhead Eversource Line
— Existing Access	— Distribution Line
Ⓞ Stonewall	— Sediment Control Barrier
— 25' Wetland Buffer (Newington)	— 100' Buffer Zone (Portsmouth)
— Existing Right-of-Way	— Municipal Boundary
— Delineated Intermittent Watercourse	— Delineated Wetland Boundary Outline
	— Field Delineated Wetland*
	— Parcel Boundary
	— Work Pad
	— 100 Year Flood Zone
	— Wellhead Protection Areas
	— Alteration of Terrain

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NO.	DATE	REVISIONS

**EVERSOURCE**

**Line E194 and U181  
Structure Replacement Project**

Portsmouth, New Hampshire

Date: July 10, 2023

Map Sheet 11 of 11

**Tighe & Bond**



